```
=> d his

     (FILE 'HOME' ENTERED AT 10:53:37 ON 27 SEP 2007)

     FILE 'REGISTRY' ENTERED AT 10:53:47 ON 27 SEP 2007
L1             STRUCTURE UPLOADED
L2          50 S L1 SSS SAM
L3       25043 S L1 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:59:43 ON 27 SEP 2007
L4       17253 S L3
L5         211 S L4 AND CAPSULAR
L6         182 S L4 AND CAPSULAR ?SACCHARIDE?
L7           6 S L6 AND SEROGROUP?
L8         176 S L6 NOT L7
L9           7 S L8 AND NEISSERIA MENINGITIDIS
L10          0 S L9 NOT L8
L11        176 S L8 NOT L7
L12        169 S L8 NOT L9

     FILE 'REGISTRY' ENTERED AT 11:22:45 ON 27 SEP 2007
L13            STRUCTURE UPLOADED
L14         50 S L13 SSS SAM
L15       3378 S L14 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:23:59 ON 27 SEP 2007
L16       1211 S L15
L17          3 S L16 AND CAPSULAR ?SACCHARIDE?
L18       1208 S L16 NOT L17
L19          4 S L18 AND ESTER LINKAGE?
```

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=> d his

     (FILE 'HOME' ENTERED AT 11:35:37 ON 27 SEP 2007)

     FILE 'REGISTRY' ENTERED AT 11:35:49 ON 27 SEP 2007
L1             STRUCTURE UPLOADED
L2           0 S L1 SSS SAM
L3          12 S L1 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:38:46 ON 27 SEP 2007
L4           3 S L3
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=> d his

     (FILE 'HOME' ENTERED AT 11:35:37 ON 27 SEP 2007)

     FILE 'REGISTRY' ENTERED AT 11:35:49 ON 27 SEP 2007
L1             STRUCTURE UPLOADED
L2           0 S L1 SSS SAM
L3          12 S L1 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:38:46 ON 27 SEP 2007
L4           3 S L3
L5           6 S ?SACCHARIDE? (P) CDI
L6           0 S "5-AMINOPENTANE-1,2-DIOL"
L7           0 S "5-AMINO1,2 DIHYDROXYPENTANE"
L8           0 S "5-AMINO-1,2 DIHYDROXYPENTANE"
L9           0 S "5-AMINO-1,2-DIHYDROXYPENTANE"
L10          0 S CDI (P) PERIODATE (P) ALDEHYDE (P) PROTEIN?
L11          0 S CDI (P) PERIODATE (P) ALDEHYDE
L12          0 S CDI (P) PERIODATE (P) PROTEIN?
L13          1 S ?CARBONYLDIIMIDAZOLE (P) PERIODATE (P) ALDEHYDE?

=>
```

```
=> d his

     (FILE 'HOME' ENTERED AT 12:22:31 ON 27 SEP 2007)

     FILE 'CASREACT' ENTERED AT 12:22:49 ON 27 SEP 2007
L1             STRUCTURE UPLOADED
L2           0 S L1 SSS SAM
L3           0 S L1 SSS FULL

     FILE 'REGISTRY' ENTERED AT 12:31:22 ON 27 SEP 2007
L4             STRUCTURE UPLOADED
L5           0 S L4
L6           2 S L4 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 12:32:25 ON 27 SEP 2007
L7           5 S L6
L8           1 S L7 AND ?SACCHARIDE?
L9           0 S L7 AND ?SUGAR?
L10          4 S L7 NOT L8
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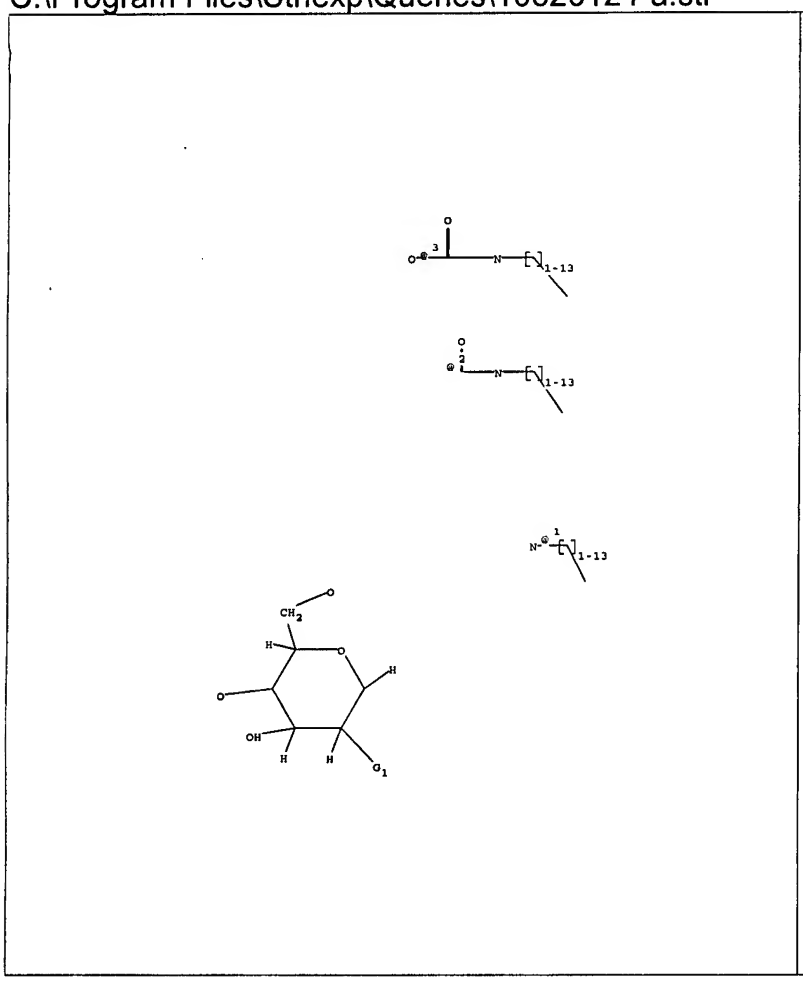

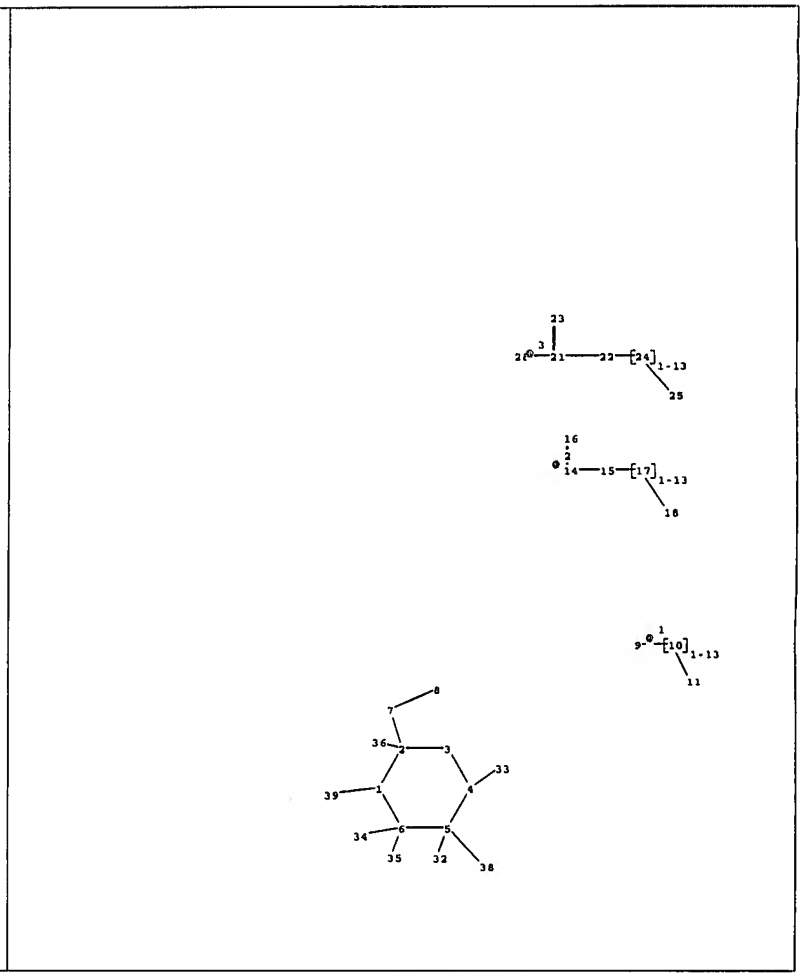

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7 8 9 10 11 14 15 16 17 18 21 22 23 24 25 28 32 33 34 35 36 38 39
ring nodes :
1 2 3 4 5 6
chain bonds :
1-39 2-7 2-36 4-33 5-32 5-38 6-34 6-35 7-8 9-10 10-11 14-15 14-16 15-17 17-18 21-22 21-23 21-28 22-24 24-25
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
1-2 1-6 1-39 2-3 3-4 4-5 5-6 5-38 6-34 9-10 14-15 14-16 15-17 21-22 21-23 21-28 22-24
exact bonds :
2-7 2-36 4-33 5-32 6-35 7-8 10-11 17-18 24-25

G1:[*1],[*2],[*3]

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 28:CLASS 32:CLASS 33:CLASS 34:CLASS 35:CLASS 36:CLASS 38:CLASS 39:CLASS

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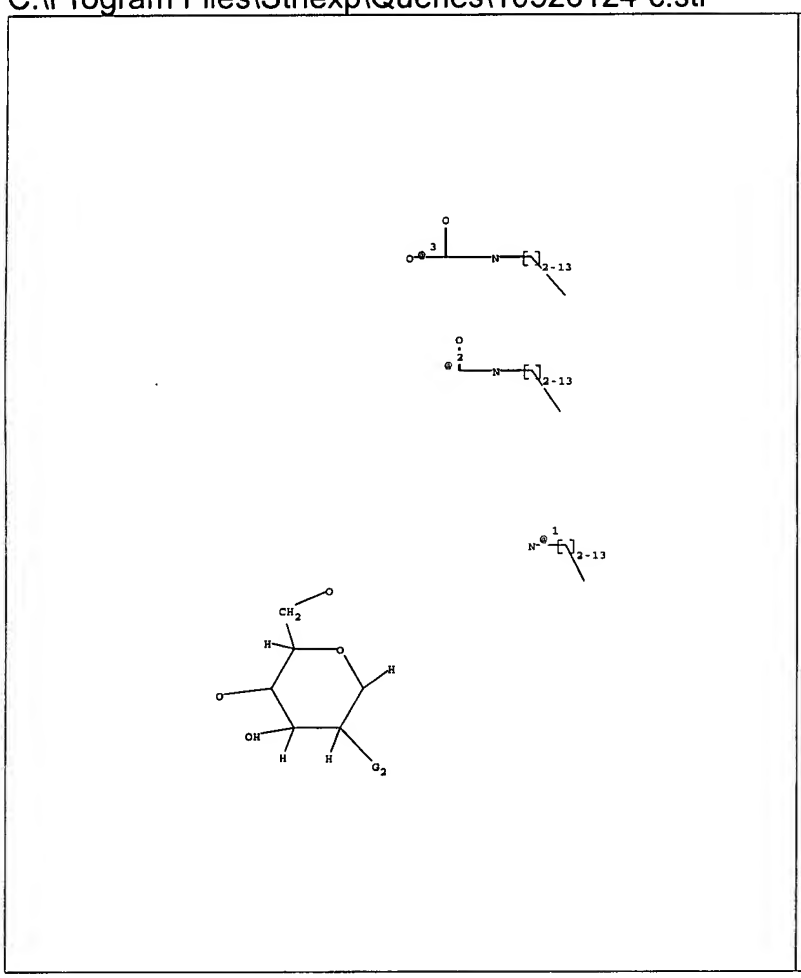

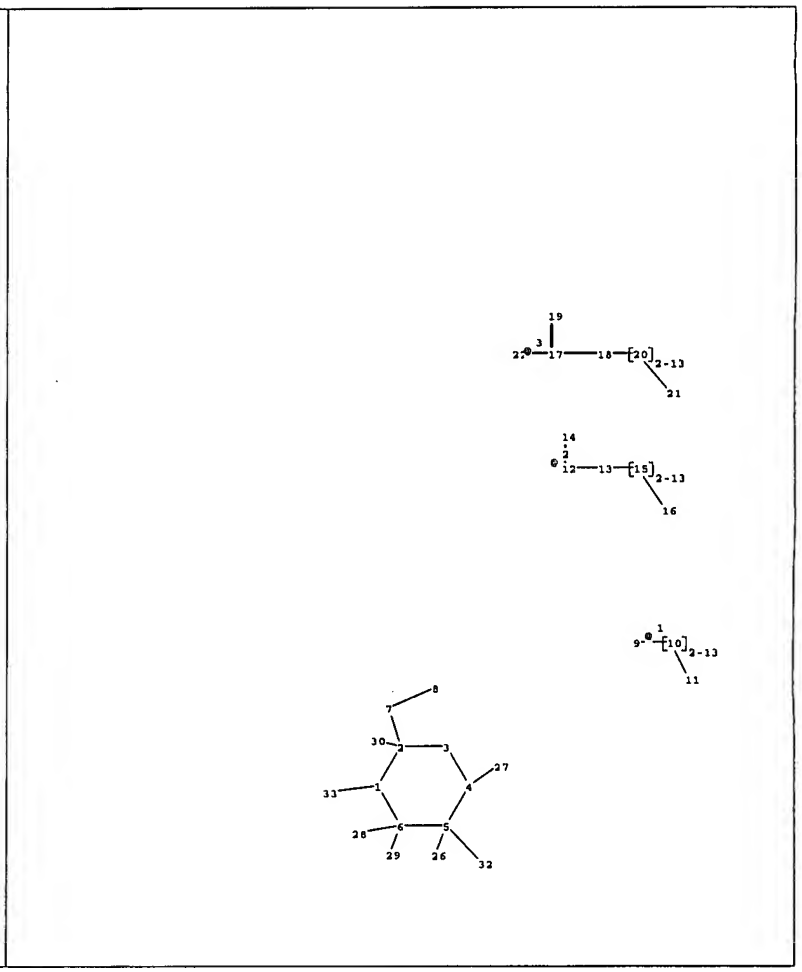

chain nodes :
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 26 27 28 29 30 32 33
ring nodes :
1 2 3 4 5 6
chain bonds :
1-33 2-7 2-30 4-27 5-26 5-32 6-28 6-29 7-8 9-10 10-11 12-13 12-14 13-15 15-16 17-18 17-19 17-22 18-20 20-21
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
1-2 1-6 1-33 2-3 3-4 4-5 5-6 5-32 6-28 9-10 12-13 12-14 13-15 17-18 17-19 17-22 18-20
exact bonds :
2-7 2-30 4-27 5-26 6-29 7-8 10-11 15-16 20-21

G1:[*1],[*2],[*3]

G2:[*1],[*2],[*3]

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 32:CLASS 33:CLASS

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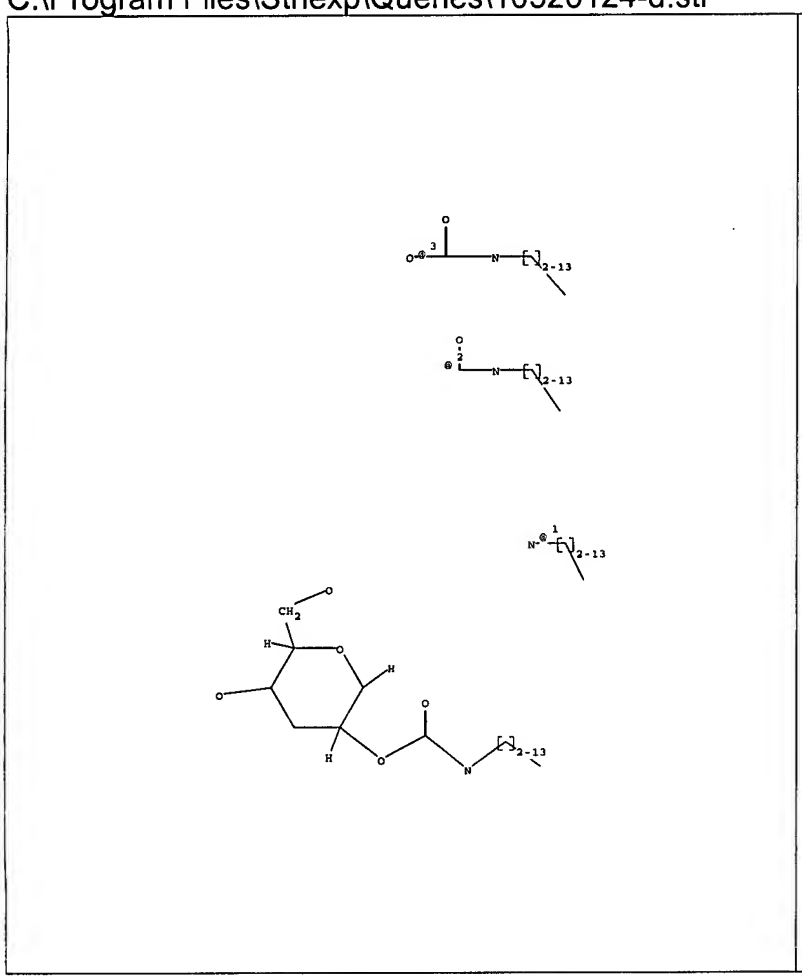

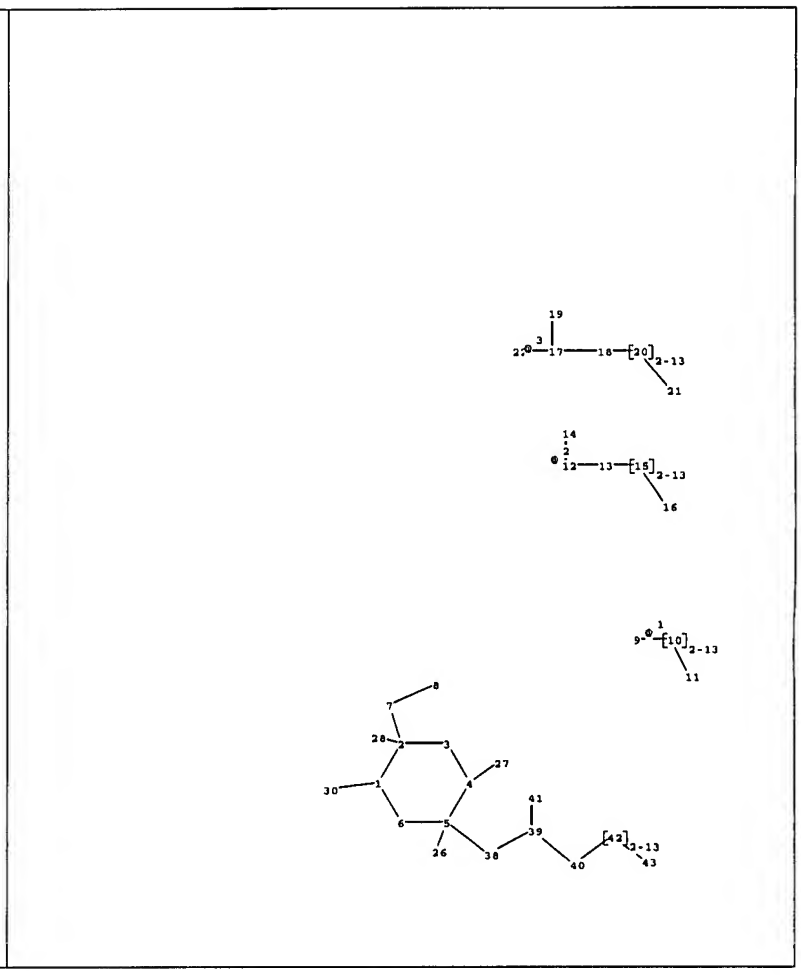

chain nodes :
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 26 27 28 30 38 39 40 41 42 43
ring nodes :
1 2 3 4 5 6
chain bonds :
1-30 2-7 2-28 4-27 5-26 5-38 7-8 9-10 10-11 12-13 12-14 13-15 15-16 17-18 17-19 17-22 18-20 20-21 38-39 39-40 39-41 40-42 42-43
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
1-2 1-6 1-30 2-3 3-4 4-5 5-6 5-38 9-10 12-13 12-14 13-15 17-18 17-19 17-22 18-20 38-39 39-40 39-41 40-42
exact bonds :
2-7 2-28 4-27 5-26 7-8 10-11 15-16 20-21 42-43

G1:[*1],[*2],[*3]

G2:[*1],[*2],[*3]

Match level :
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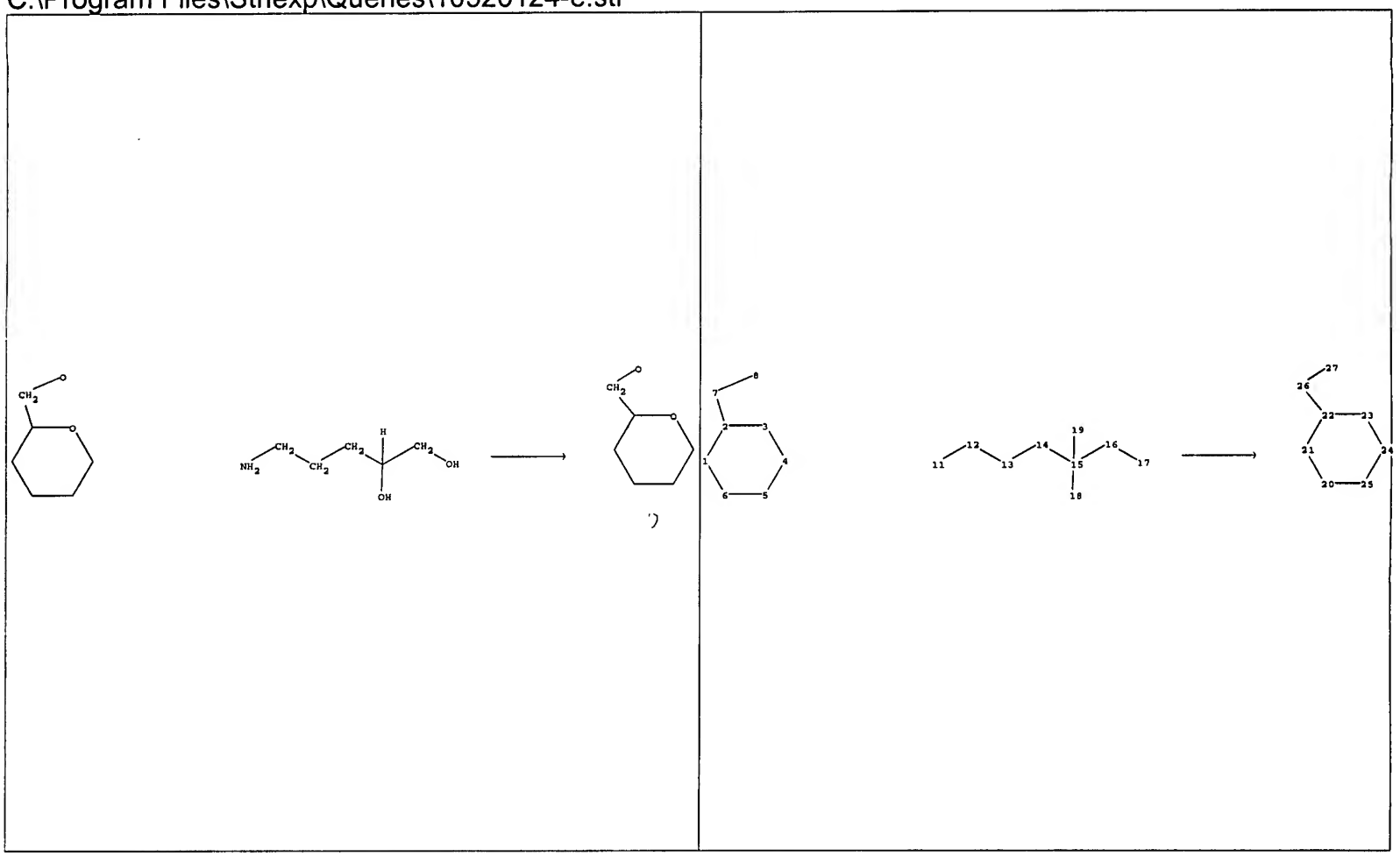


chain nodes :
7 8 11 12 13 14 15 16 17 18 19 26 27
ring nodes :
1 2 3 4 5 6 20 21 22 23 24 25
chain bonds :
2-7 7-8 11-12 12-13 13-14 14-15 15-16 15-18 15-19 16-17 22-26 26-27
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 20-21 20-25 21-22 22-23 23-24 24-25
exact/norm bonds :
1-2 1-6 2-3 3-4 4-5 5-6 15-18 20-21 20-25 21-22 22-23 23-24 24-25
exact bonds :
2-7 7-8 11-12 12-13 13-14 14-15 15-16 15-19 16-17 22-26 26-27

G1

G2

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:CLASS 27:CLASS
fragments assigned product role:
containing 20
fragments assigned reactant/reagent role:

containing 11

L7 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:955421 CAPLUS
DOCUMENT NUMBER: 140:140399
TITLE: Genetic basis for biosynthesis of the (α1→4)-linked N-acetyl-D-glucosamine 1-phosphate capsule of Neisseria meningitidis serogroup X
AUTHOR(S): Tzeng, Yih-ling; Noble, Corie; Stephens, David S.
CORPORATE SOURCE: Department of Medicine, Emory University School of Medicine, Atlanta, GA, USA
SOURCE: Infection and Immunity (2003), 71(12), 6712-6720
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The genetic basis for biosynthesis of the (α1→4)-linked N-acetyl-D-glucosamine 1-phosphate capsule of Neisseria meningitidis serogroup X was defined. The biosynthesis gene cassette was a .apprx.4.2-kb region located between ctrA of the capsule transport operon and galE, which encodes the UDP-glucose-4-epimerase. This location was identical to the locations of the biosynthesis cassettes in other meningococcal serogroups. Three open reading frames unique to meningococcus serogroup X were identified. Deletion-insertion mutation and colony immunoblotting confirmed that these three genes were essential for serogroup X capsule expression, and the genes were designated xcbA, xcbB, and xcbC (serogroup X capsule biosynthesis). Reverse transcriptase PCR indicated that the xcbABC genes form an operon and are cotranscribed divergently from ctrA. XcbA exhibited 52% amino acid similarity to SacB, the putative capsule polymerase of meningococcus serogroup A, suggesting that it plays a role as the serogroup X capsule polymerase. An IS1016 element was found within the intergenic region separating ctrA and xcbA in multiple strains, and this element did not interfere with capsule expression.
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

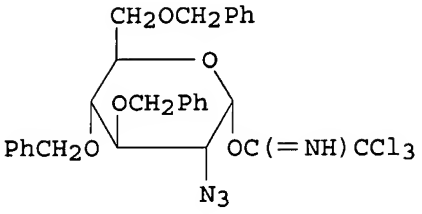
L7 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:806294 CAPLUS
DOCUMENT NUMBER: 138:170432
TITLE: Towards a synthetic glycoconjugate vaccine against Neisseria meningitidis A
AUTHOR(S): Berkin, Ali; Coxon, Bruce; Pozsgay, Vince
CORPORATE SOURCE: Laboratory of Developmental and Molecular Immunity, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, 20892-2720, USA
SOURCE: Chemistry--A European Journal (2002), 8(19), 4424-4433
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:170432
AB Albumin conjugates of synthetic fragments of the capsular polysaccharide of the Gram-neg. bacterium Neisseria meningitidis serogroup A were prepared The fragments include monosaccharides α-D-ManpNAc-(1→O)-(CH2)2NH2 and 6-O-P(O)(O-)2-α-D-ManpNAc-(1→O)-(CH2)2NH2, disaccharide α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-(1→O)-(CH2)2NH2, and trisaccharide α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-(1→O)-(CH2)2NH2. Two monosaccharide blocks were employed as key intermediates. The reducing-end mannose unit featured the NHAc group at C-2, and

contained the aminoethyl spacer as the aglycon for the final bioconjugation. The inter-residual phosphodiester linkages were fashioned from an anomerically positioned H-phosphonate group in a 2-azido-mannose building block. The spacer-linked saccharides were N-acylated with hepta-4,6-dienoic acid and the resulting conjugated diene-equipped saccharides were subjected to Diels - Alder-type addition with maleimidobutyryl-group functionalized human serum albumin to form covalent conjugates containing up to 26 saccharide haptens per albumin mol. Complete 1H, 13C, and 31P NMR assignments are given. Antigenicity of the neoglycoconjugates was demonstrated by a double immunodiffusion assay which indicated that a fragment as small as a monosaccharide is recognized by a polyclonal meningococcus group A antiserum and that the O-acetyl group(s) present in the natural capsular material is not essential for antigenicity.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:253018 CAPLUS
DOCUMENT NUMBER: 122:133613
TITLE: Molecular recognition of antigenic polysaccharides: a conformational comparison of capsules from Streptococcus pneumoniae serogroup 9
AUTHOR(S): Rutherford, Trevor J.; Jones, Christopher; Davies, David B.; Clare Elliott, A.
CORPORATE SOURCE: Laboratory for Molecular Structure, National Institute for Biological Standards and Control, Blanche Lane, South Mimms, Potters Bar Hertfordshire, EN6 3QG, UK
SOURCE: Carbohydrate Research (1994), 265(1), 97-111
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Aqueous solution conformations of three antigenic bacterial glucuronic acid-containing capsular polysaccharides (CPS) from S. pneumoniae serogroup 9 were determined using a combination of NMR data (NOE build-up rates and conformation-dependent chemical shifts), simulated annealing, and mol. dynamics simulations. Each polymer adopts a flexible extended ribbon conformation in solution Conformations of structural elements shared by each PS are indistinguishable. Differences in conformations are minor and localized at the sites of structural variations; there is no evidence of long-range stabilization of a secondary structure. It is likely that antigenic specificity of Group 9 PS is dominated by local structural variation rather than by conformational differences.

L7 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:596350 CAPLUS
DOCUMENT NUMBER: 103:196350
TITLE: Glycosyl imidates. 16. Synthesis of the trisaccharide of the repeating unit of the capsular polysaccharide of Neisseria meningitidis (Serogroup L)
AUTHOR(S): Kinzy, Willy; Schmidt, Richard R.
CORPORATE SOURCE: Fak. Chem., Univ. Konstanz, Konstanz, D-7750, Fed. Rep. Ger.
SOURCE: Liebigs Annalen der Chemie (1985), (8), 1537-45
CODEN: LACHDL; ISSN: 0170-2041
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 103:196350
GI



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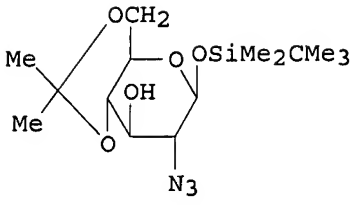
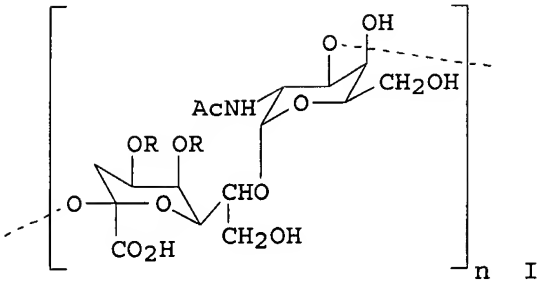


II

AB Trisaccharide β-D-GlcNAc-(1→3)-β-D-GlcNAc-(1→3)-β-D-GlcNAc, the repeating unit of the capsular polysaccharide of N. meningitidis, was prepared in several steps. Glucopyranosyl trichloroacetimidate I was used as the glucosyl donor and glucose derivative II as the acceptor in the 1st glycosidation. The resultant disaccharide was converted into trichloroacetamidate, which was used as the donor and II as the acceptor in the 2nd glycosidation.

L7 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:50056 CAPLUS
DOCUMENT NUMBER: 98:50056
TITLE: The structure of the capsular polysaccharide obtained from a new serogroup (L) of Neisseria meningitidis
AUTHOR(S): Jennings, Harold J.; Lugowski, Czeslaw W.; Ashton, Fraser E.; Ryan, J. Alan
CORPORATE SOURCE: Div. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON, K1A 0R6, Can.
SOURCE: Carbohydrate Research (1983), 112(1), 105-11
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A newly isolated serogroup of N. meningitidis (serogroup L), obtained from contacts of a patient with meningococcal meningitis, elaborates a structurally unique capsular polysaccharide . The polysaccharide contains only 2-acetamido-2-deoxy-D-glucosyl and phosphate constituents in the molar ratio of 3:1, and is composed of the following repeating unit: →3(-β-D-GlcpNAc-(1→3)-β-D-GlcpNAc-(1→3)-α-D-GlcpNAc-(1-OP(:O)(OH)O-.

L7 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:134673 CAPLUS
DOCUMENT NUMBER: 88:134673
TITLE: Structural elucidation of the 3-deoxy-D-manno-octulosonic acid containing meningococcal 29-e capsular polysaccharide antigen using carbon-13 nuclear magnetic resonance
AUTHOR(S): Bhattacharjee, Apurba K.; Jennings, Harold J.; Kenny, C. Paul
CORPORATE SOURCE: Div. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON, Can.
SOURCE: Biochemistry (1978), 17(4), 645-51
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The capsular polysaccharide antigen from Neisseria meningitidis serogroup 29-e contains equimolar quantities of 2-acetamido-2-deoxy-D-galactose and 3-deoxy-D-manno-octulosonic acid (KDO), the latter of which is rarely found in biopolymers other than lipopolysaccharides. Carbon-13 nuclear magnetic resonance in conjunction with other chemical data indicated that the polysaccharide is composed of an alternating sequence of these 2 residues, the linkages being at C-3 of galactosamine and C-7 of KDO in the α-D and β-D configuration, resp. The native 29-e polysaccharide is O-acetylated, the O-acetyl groups being located at C-4 and C-5 of the KDO residues (I). Assignments of the signals in the 13C nuclear magnetic resonance spectrum of the 29-e polysaccharide were made by consideration of those in the spectra of the monomer models, which necessitated the first recorded syntheses of methyl-α- and -β-D-3-deoxy-manno-octulopyranosonic acid. Like the Me α- and β-D-ketosides of sialic acid (Na+ salts), the equivalent Me α- and β-D-ketosides of KDO exhibit large chemical shift differences in the exocyclic C-8 position dependent on anomeric configuration. This can again be attributed to hydrogen bonding between the axial carboxylate group of the Me β-D anomer of KDO (C1 conformation) and the primary hydroxy group at C-8. This phenomenon is also exhibited by the β-D-linked KDO units of the 29-e polysaccharide.

=> d l7 1-6 ibib abs hitstr

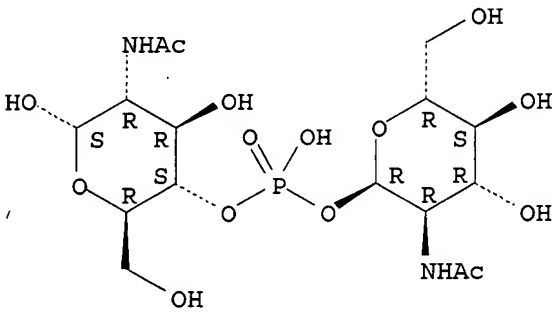
L7 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:955421 CAPLUS
DOCUMENT NUMBER: 140:140399
TITLE: Genetic basis for biosynthesis of the (α1→4)-linked N-acetyl-D-glucosamine 1-phosphate capsule of Neisseria meningitidis serogroup X
AUTHOR(S): Tzeng, Yih-ling; Noble, Corie; Stephens, David S.
CORPORATE SOURCE: Department of Medicine, Emory University School of Medicine, Atlanta, GA, USA
SOURCE: Infection and Immunity (2003), 71(12), 6712-6720
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The genetic basis for biosynthesis of the (α1→4)-linked N-acetyl-D-glucosamine 1-phosphate capsule of Neisseria meningitidis serogroup X was defined. The biosynthesis gene cassette was a .apprx.4.2-kb region located between ctrA of the capsule transport operon and galE, which encodes the UDP-glucose-4-epimerase. This location was identical to the locations of the biosynthesis cassettes in other meningococcal serogroups. Three open reading frames unique to meningococcus serogroup X were identified. Deletion-insertion mutation and colony immunoblotting confirmed that these three genes were essential for serogroup X capsule expression, and the genes were

designated xcbA, xcbB, and xcbC (serogroup X capsule biosynthesis). Reverse transcriptase PCR indicated that the xcbABC genes form an operon and are cotranscribed divergently from ctrA. XcbA exhibited 52% amino acid similarity to SacB, the putative capsule polymerase of meningococcus serogroup A, suggesting that it plays a role as the serogroup X capsule polymerase. An IS1016 element was found within the intergenic region separating ctrA and xcbA in multiple strains, and this element did not interfere with capsule expression.

IT 651312-38-8
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(capsular polysaccharide with repeating unit of; genetic basis for biosynthesis of (α1→4)-linked N-acetyl-D-glucosamine 1-phosphate capsule of Neisseria meningitidis serogroup X)

RN 651312-38-8 CAPLUS
CN α-D-Glucopyranose, 2-(acetylamino)-2-deoxy-, 4-[2-(acetylamino)-2-deoxy-α-D-glucopyranosyl hydrogen phosphate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:806294 CAPLUS
DOCUMENT NUMBER: 138:170432
TITLE: Towards a synthetic glycoconjugate vaccine against Neisseria meningitidis A
AUTHOR(S): Berkin, Ali; Coxon, Bruce; Pozsgay, Vince
CORPORATE SOURCE: Laboratory of Developmental and Molecular Immunity, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, 20892-2720, USA
SOURCE: Chemistry--A European Journal (2002), 8(19), 4424-4433
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:170432

AB Albumin conjugates of synthetic fragments of the capsular polysaccharide of the Gram-neg. bacterium Neisseria meningitidis serogroup A were prepared The fragments include monosaccharides α-D-ManpNAc-(1→O)-(CH2)2NH2 and 6-O-P(O)(O-)2-α-D-ManpNAc-(1→O)-(CH2)2NH2, disaccharide α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-(1→O)-(CH2)2NH2, and trisaccharide α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-[1→O-P(O)(O-)→6]-α-D-ManpNAc-(1→O)-(CH2)2NH2. Two monosaccharide blocks were employed as key intermediates. The reducing-end mannose unit featured the NHAc group at C-2, and contained the aminoethyl spacer as the aglycon for the final

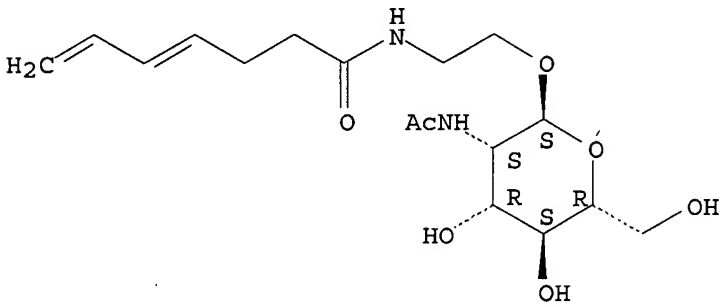
bioconjugation. The inter-residual phosphodiester linkages were fashioned from an anomerically positioned H-phosphonate group in a 2-azido-mannose building block. The spacer-linked saccharides were N-acylated with hepta-4,6-dienoic acid and the resulting conjugated diene-equipped saccharides were subjected to Diels - Alder-type addition with maleimidobutyryl-group functionalized human serum albumin to form covalent conjugates containing up to 26 saccharide haptens per albumin mol. Complete 1H, 13C, and 31P NMR assignments are given. Antigenicity of the neoglycoconjugates was demonstrated by a double immunodiffusion assay which indicated that a fragment as small as a monosaccharide is recognized by a polyclonal meningococcus group A antiserum and that the O-acetyl group(s) present in the natural capsular material is not essential for antigenicity.

IT 497096-35-2DP, human serum albumin bound 497096-37-4DP, human serum albumin bound 497096-39-6DP, human serum albumin bound 497096-41-0DP, human serum albumin bound
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis and antigenicity of human serum albumin conjugates of synthetic fragments of the capsular polysaccharide of Neisseria meningitidis)

RN 497096-35-2 CAPLUS

CN 4,6-Heptadienamide, N-[2-[[2-(acetylamino)-2-deoxy-α-D-mannopyranosyl]oxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



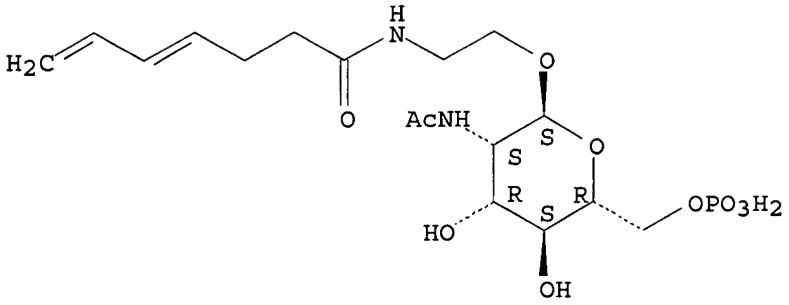
RN 497096-37-4 CAPLUS

CN 4,6-Heptadienamide, N-[2-[[2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl]oxy]ethyl]-, compd. with N,N-diethylethanamine (1:2) (9CI) (CA INDEX NAME)

CM 1

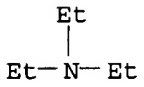
CRN 497096-36-3
CMF C17 H29 N2 O10 P

Absolute stereochemistry.
Double bond geometry unknown.



CM 2

CRN 121-44-8
CMF C6 H15 N

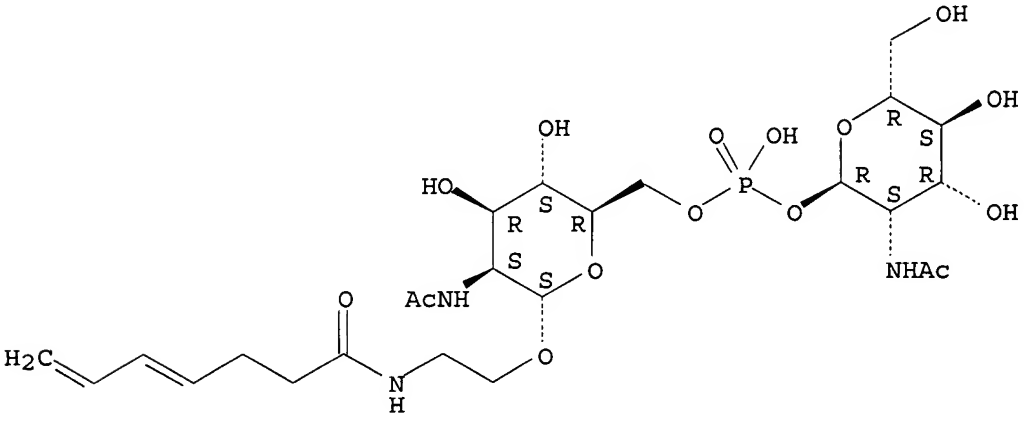


RN 497096-39-6 CAPLUS
CN 4,6-Heptadienamide, N-[2-[[2-(acetylamino)-6-O-[[[2-(acetylamino)-2-deoxy-α-D-mannopyranosyl]oxy]hydroxyphosphinyl]-2-deoxy-α-D-mannopyranosyl]oxy]ethyl]-, compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

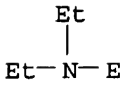
CRN 497096-38-5
CMF C25 H42 N3 O15 P

Absolute stereochemistry.
Double bond geometry unknown.



CM 2

CRN 121-44-8
CMF C6 H15 N



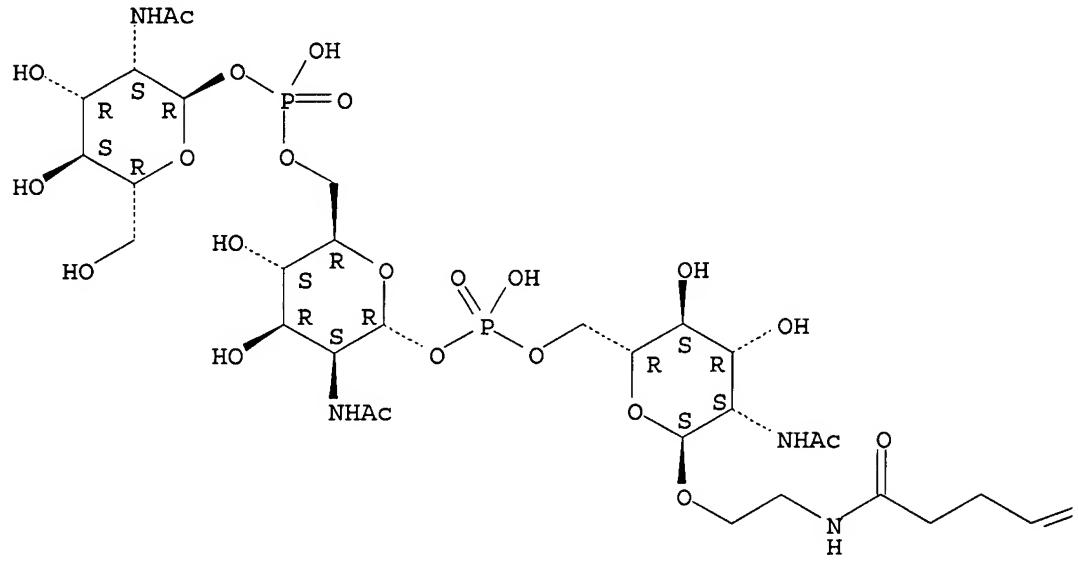
RN 497096-41-0 CAPLUS
CN 4,6-Heptadienamide, N-[2-[[O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl]oxy]ethyl]-, compd. with N,N-diethylethanamine (1:2) (9CI) (CA INDEX NAME)

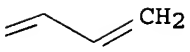
CM 1

CRN 497096-40-9
CMF C33 H56 N4 O23 P2

Absolute stereochemistry.
Double bond geometry unknown.

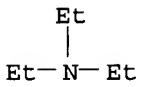
PAGE 1-A





CM 2

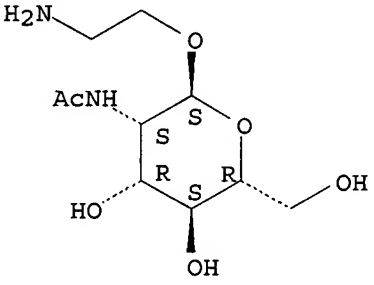
CRN 121-44-8
CMF C6 H15 N



IT 497096-00-1P 497096-03-4P 497096-06-7P
497096-09-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and antigenicity of human serum albumin conjugates of synthetic fragments of the capsular polysaccharide of Neisseria meningitidis)

RN 497096-00-1 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl 2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

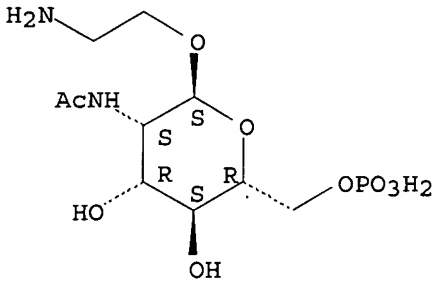


RN 497096-03-4 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl 2-(acetylamino)-2-deoxy-, 6-(dihydrogen phosphate), compd. with N,N-diethylethanamine (1:2) (9CI) (CA INDEX NAME)

CM 1

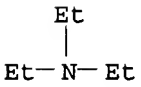
CRN 497096-02-3
CMF C10 H21 N2 O9 P

Absolute stereochemistry. Rotation (+).



CM 2

CRN 121-44-8
CMF C6 H15 N

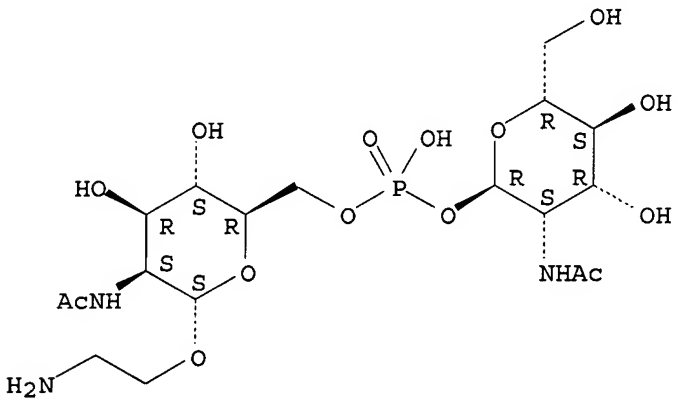


RN 497096-06-7 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl 2-(acetylamino)-2-deoxy-, 6-[2-(acetylamino)-2-deoxy-α-D-mannopyranosyl hydrogen phosphate], compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

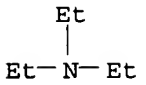
CRN 497096-05-6
CMF C18 H34 N3 O14 P

Absolute stereochemistry. Rotation (+).



CM 2

CRN 121-44-8
CMF C6 H15 N

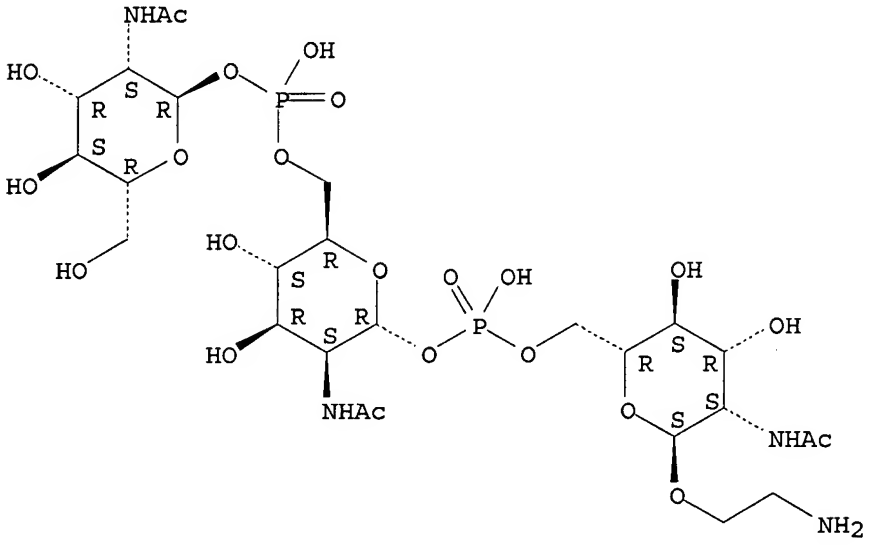


RN 497096-09-0 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-2-(acetylamino)-2-deoxy-, compd. with N,N-diethylethanamine (1:2) (9CI) (CA INDEX NAME)

CM 1

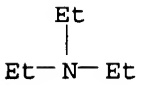
CRN 497096-08-9
CMF C26 H48 N4 O22 P2

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N



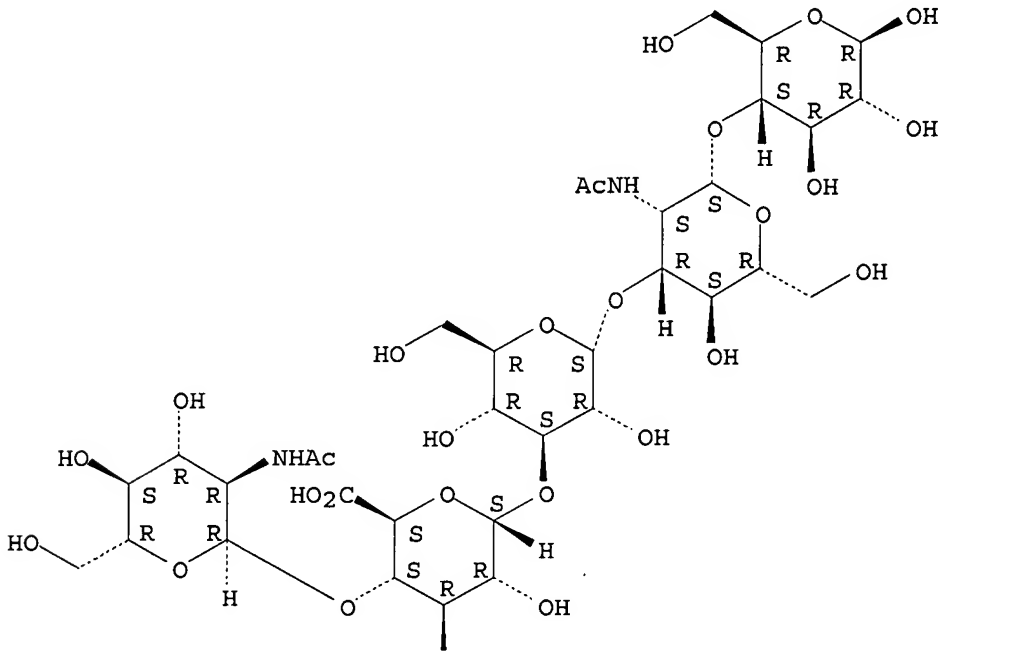
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:253018 CAPLUS
DOCUMENT NUMBER: 122:133613
TITLE: Molecular recognition of antigenic polysaccharides: a conformational comparison of capsules from Streptococcus pneumoniae serogroup 9
AUTHOR(S): Rutherford, Trevor J.; Jones, Christopher; Davies, David B.; Clare Elliott, A.

CORPORATE SOURCE: Laboratory for Molecular Structure, National Institute for Biological Standards and Control, Blanche Lane, South Mimms, Potters Bar Hertfordshire, EN6 3QG, UK
SOURCE: Carbohydrate Research (1994), 265(1), 97-111
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Aqueous solution conformations of three antigenic bacterial glucuronic acid-containing capsular polysaccharides (CPS) from S. pneumoniae serogroup 9 were determined using a combination of NMR data (NOE build-up rates and conformation-dependent chemical shifts), simulated annealing, and mol. dynamics simulations. Each polymer adopts a flexible extended ribbon conformation in solution Conformations of structural elements shared by each PS are indistinguishable. Differences in conformations are minor and localized at the sites of structural variations; there is no evidence of long-range stabilization of a secondary structure. It is likely that antigenic specificity of Group 9 PS is dominated by local structural variation rather than by conformational differences.
IT 161033-27-8 161060-15-7
RL: PRP (Properties)
(conformation and mol. dynamics simulation of the repeating unit of capsular polysaccharides from Streptococcus pneumoniae serogroup 9)
RN 161033-27-8 CAPLUS
CN β-D-Glucopyranose, O-2-(acetylamino)-2-deoxy-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranuronosyl-(1→3)-O-α-D-glucopyranosyl-(1→3)-O-2-(acetylamino)-2-deoxy-β-D-mannopyranosyl-(1→4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



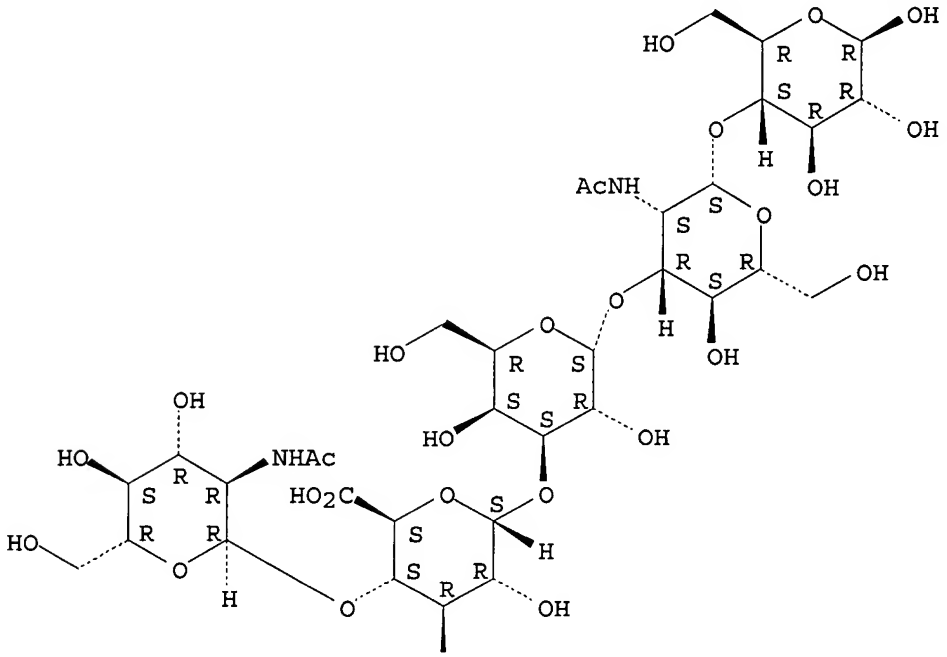
PAGE 2-A

OH

RN 161060-15-7 CAPLUS
CN β-D-Glucopyranose, O-2-(acetylamino)-2-deoxy-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranuronosyl-(1→3)-O-α-D-galactopyranosyl-(1→3)-O-2-(acetylamino)-2-deoxy-β-D-mannopyranosyl-(1→4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

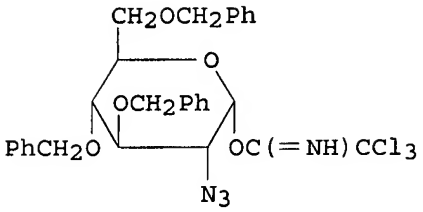


PAGE 2-A

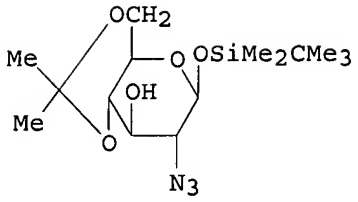
OH

L7 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:596350 CAPLUS
DOCUMENT NUMBER: 103:196350
TITLE: Glycosyl imidates. 16. Synthesis of the trisaccharide of the repeating unit of the capsular polysaccharide of Neisseria meningitidis (Serogroup L)
AUTHOR(S): Kinzy, Willy; Schmidt, Richard R.
CORPORATE SOURCE: Fak. Chem., Univ. Konstanz, Konstanz, D-7750, Fed. Rep. Ger.
SOURCE: Liebigs Annalen der Chemie (1985), (8), 1537-45
CODEN: LACHDL; ISSN: 0170-2041
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 103:196350

GI



I



II

AB Trisaccharide β-D-GlcNAc-(1→3)-β-D-GlcNAc-(1→3)-β-D-GlcNAc, the repeating unit of the capsular polysaccharide of N. meningitidis, was prepared in several steps. Glucopyranosyl trichloroacetimidate I was used as the glucosyl donor and glucose derivative II as the acceptor in the 1st glycosidation. The resultant disaccharide was converted into trichloroacetamidate, which was used as the donor and II as the acceptor in the 2nd glycosidation.

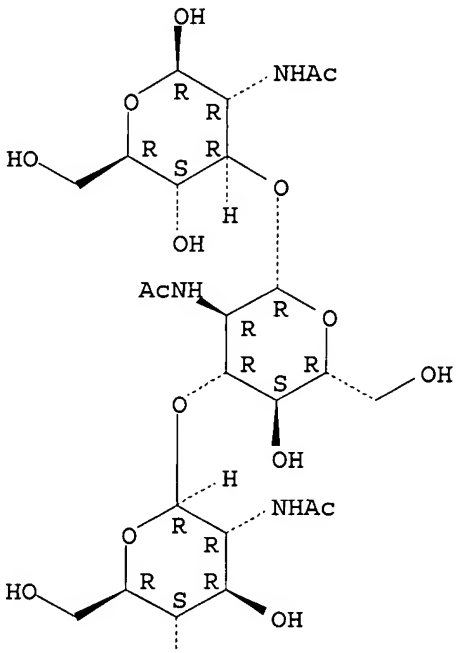
IT 99088-39-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 99088-39-8 CAPLUS

CN β-D-Glucopyranose, O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

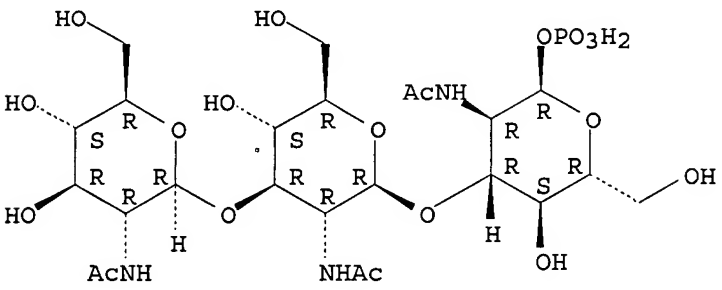
PAGE 1-A



OH

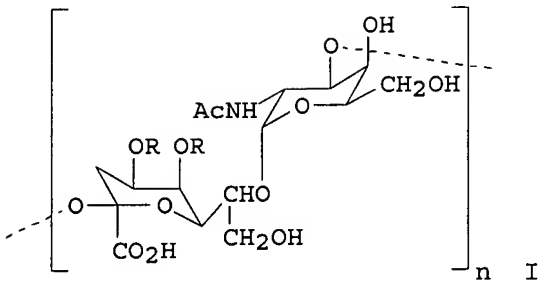
L7 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:50056 CAPLUS
DOCUMENT NUMBER: 98:50056
TITLE: The structure of the capsular polysaccharide obtained from a new serogroup (L) of Neisseria meningitidis
AUTHOR(S): Jennings, Harold J.; Lugowski, Czeslaw W.; Ashton, Fraser E.; Ryan, J. Alan
CORPORATE SOURCE: Div. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON, K1A 0R6, Can.
SOURCE: Carbohydrate Research (1983), 112(1), 105-11
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A newly isolated serogroup of N. meningitidis (serogroup L), obtained from contacts of a patient with meningococcal meningitis, elaborates a structurally unique capsular polysaccharide . The polysaccharide contains only 2-acetamido-2-deoxy-D-glucosyl and phosphate constituents in the molar ratio of 3:1, and is composed of the following repeating unit: →3(-β-D-GlcpNAc-(1→3)-β-D-GlcpNAc-(1→3)-α-D-GlcpNAc-(1-OP(:O)(OH)O-.
IT 84325-14-4
RL: BIOL (Biological study)
(polysaccharide repeating unit of Neisseria meningitidis serogroup L capsule)
RN 84325-14-4 CAPLUS
CN α-D-Glucopyranose, O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-2-(acetylamino)-2-deoxy-, 1-(dihydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:134673 CAPLUS
DOCUMENT NUMBER: 88:134673
TITLE: Structural elucidation of the 3-deoxy-D-manno-octulosonic acid containing meningococcal 29-e capsular polysaccharide antigen using carbon-13 nuclear magnetic resonance
AUTHOR(S): Bhattacharjee, Apurba K.; Jennings, Harold J.; Kenny, C. Paul
CORPORATE SOURCE: Div. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON, Can.
SOURCE: Biochemistry (1978), 17(4), 645-51

CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

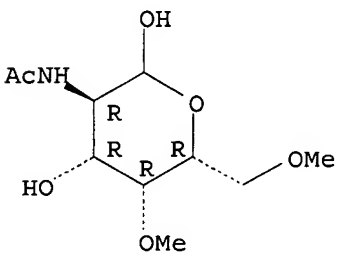
AB The capsular polysaccharide antigen from Neisseria meningitidis serogroup 29-e contains equimolar quantities of 2-acetamido-2-deoxy-D-galactose and 3-deoxy-D-manno-octulosonic acid (KDO), the latter of which is rarely found in biopolymers other than lipopolysaccharides. Carbon-13 nuclear magnetic resonance in conjunction with other chemical data indicated that the polysaccharide is composed of an alternating sequence of these 2 residues, the linkages being at C-3 of galactosamine and C-7 of KDO in the α-D and β-D configuration, resp. The native 29-e polysaccharide is O-acetylated, the O-acetyl groups being located at C-4 and C-5 of the KDO residues (I). Assignments of the signals in the 13C nuclear magnetic resonance spectrum of the 29-e polysaccharide were made by consideration of those in the spectra of the monomer models, which necessitated the first recorded syntheses of methyl-α- and -β-D-3-deoxy-manno-octulopyranosonic acid. Like the Me α- and β-D-ketosides of sialic acid (Na+ salts), the equivalent Me α- and β-D-ketosides of KDO exhibit large chemical shift differences in the exocyclic C-8 position dependent on anomeric configuration. This can again be attributed to hydrogen bonding between the axial carboxylate group of the Me β-D anomer of KDO (C1 conformation) and the primary hydroxy group at C-8. This phenomenon is also exhibited by the β-D-linked KDO units of the 29-e polysaccharide.

IT 66053-66-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 66053-66-5 CAPLUS

CN D-Galactopyranose, 2-(acetylamino)-2-deoxy-4,6-di-O-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L9 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1272394 CAPLUS
DOCUMENT NUMBER: 146:184664
TITLE: Synthesis of stable C-phosphonate analogs of Neisseria meningitidis group A capsular polysaccharide structures using modified Mitsunobu reaction conditions
AUTHOR(S): Teodorovic, Peter; Slaettegard, Rikard; Oscarson, Stefan
CORPORATE SOURCE: Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, S-106 91, Swed.
SOURCE: Organic & Biomolecular Chemistry (2006), 4(24), 4485-4490
CODEN: OBCRAK; ISSN: 1477-0520
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:184664

AB Examples of synthetic C-phosphonate analogs of microbial polysaccharide structures containing inter-residue phosphodiester linkages are most rare. The successful construction of such analogs of the Neisseria meningitidis Group A capsular polysaccharide is described. Using a modified Mitsunobu reaction (tris(4-chlorophenyl)phosphine, DIAD, excess of Et3N) between an anomeric C-phosphonate monoester and a 6-OH ManNAc acceptor a high yield (88%) of a dimer was obtained. Transformation of the dimer into a new 6-OH acceptor through deacetylation and further reaction with the elongating C-phosphonate monomer employing the same conditions afforded the trimer in 92% yield. Iteration of the procedure then afforded the tetramer with a coupling yield of 85%. The di-, tri- and tetramer were deprotected to give target structures ready for conjugation to a carrier protein and subsequent immunol. evaluation.

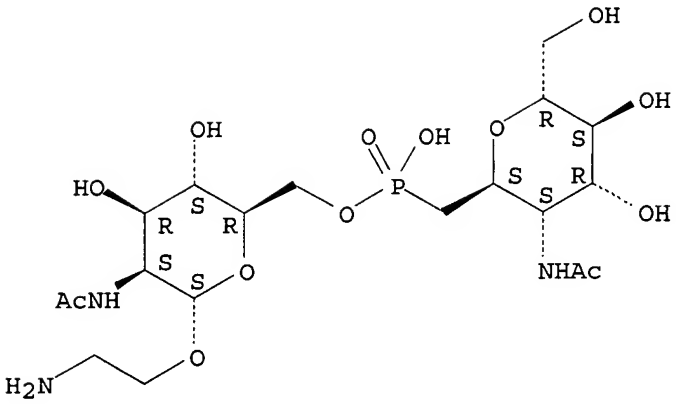
IT 920978-51-4P 920978-52-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of Neisseria meningitidis group A capsular polysaccharide C-phosphonate analogs via Mitsunobu reaction as a key step)

RN 920978-51-4 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl 2-(acetylamino)-2-deoxy-, 6-ester with 5-(acetylamino)-2,6-anhydro-5,7-dideoxy-7-phosphono-D-glycero-D-manno-heptitol, compd. with N,N-diethylethanamine (1:1) (CA INDEX NAME)

CM 1

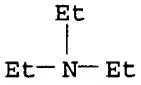
CRN 914641-13-7
CMF C19 H36 N3 O13 P

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N

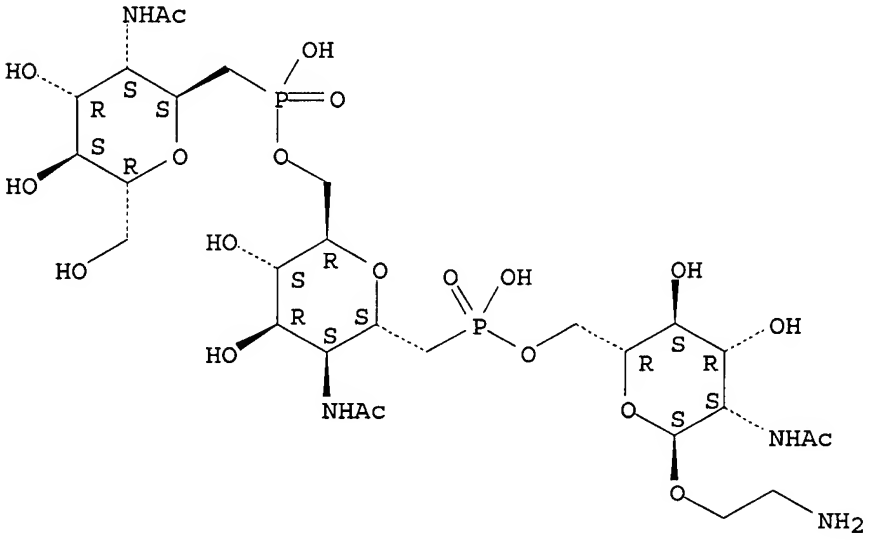


RN 920978-52-5 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl O-5-(acetylamino)-2,6-anhydro-5,7-dideoxy-D-glycero-D-manno-heptitol-7-ylphosphinico-(7→1)-O-5-(acetylamino)-2,6-anhydro-5,7-dideoxy-D-glycero-D-manno-heptitol-7-ylphosphinico-(7→6)-2-(acetylamino)-2-deoxy-, compd. with N,N-diethylethanamine (1:2) (CA INDEX NAME)

CM 1

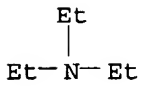
CRN 914641-14-8
CMF C28 H52 N4 O20 P2

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N

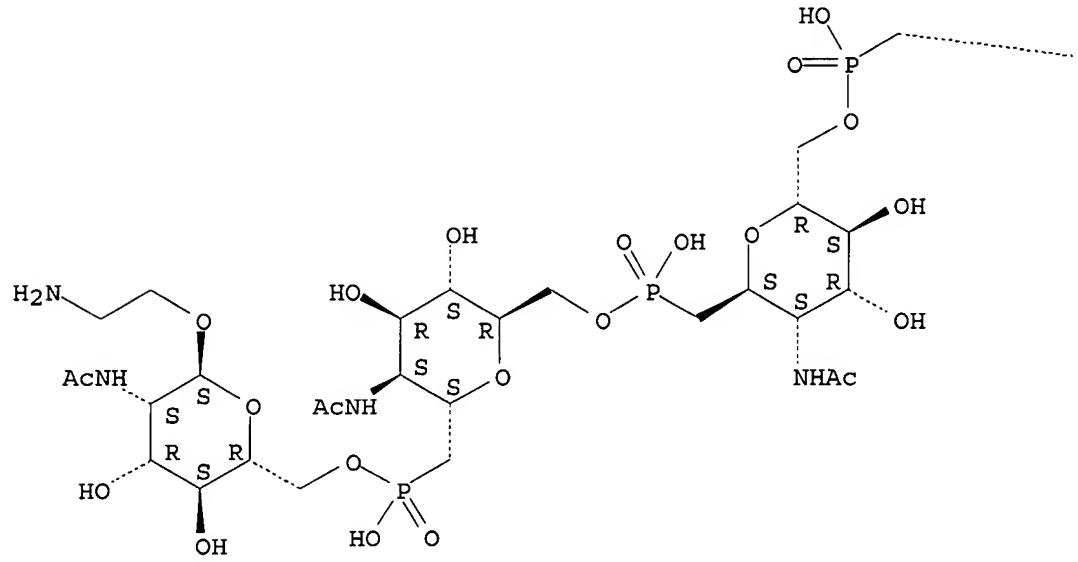


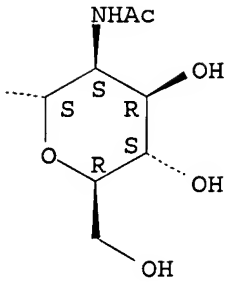
IT 920978-55-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of Neisseria meningitidis group A capsular polysaccharide C-phosphonate analogs via Mitsunobu reaction as a key step)
RN 920978-55-8 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl O-5-(acetylamino)-2,6-anhydro-5,7-dideoxy-D-glycero-D-manno-heptitol-7-ylphosphinico-(7→1)-O-5-(acetylamino)-2,6-anhydro-5,7-dideoxy-D-glycero-D-manno-heptitol-7-ylphosphinico-(7→1)-O-5-(acetylamino)-2,6-anhydro-5,7-dideoxy-D-glycero-D-manno-heptitol-7-ylphosphinico-(7→6)-2-(acetylamino)-2-deoxy-, compd. with N,N-diethylethanamine (1:3) (CA INDEX NAME)

CM 1

CRN 920978-54-7
CMF C37 H68 N5 O27 P3

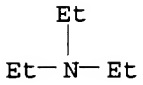
Absolute stereochemistry. Rotation (+).





CM 2

CRN 121-44-8
CMF C6 H15 N



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1071792 CAPLUS
DOCUMENT NUMBER: 144:6987
TITLE: Synthesis of structures corresponding to the capsular polysaccharide of Neisseria meningitidis group A
AUTHOR(S): Slaettegard, Rikard; Teodorovic, Peter; Hadgu Kinfe, Henok; Ravenscroft, Neil; Gammon, David W.; Oscarson, Stefan
CORPORATE SOURCE: Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, S-106 91, Swed.
SOURCE: Organic & Biomolecular Chemistry (2005), 3(20), 3782-3787
CODEN: OBCRAK; ISSN: 1477-0520
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 144:6987

AB Four differently substituted trimers of the capsular polysaccharide (CPS) repeating unit have been synthesized in order to investigate the dependence on oligosaccharide size, acetylation and mode of phosphorylation of glycoconjugate vaccines against Neisseria meningitidis group A. A spacer-containing starting monomer, a H-phosphonate elongating monomer and a 6-O-phosphorylated H-phosphonate cap monomer have been synthesized and coupled together to afford, after deprotection, the target trimer structures differing in their acetylation and phosphorylation substitution pattern.

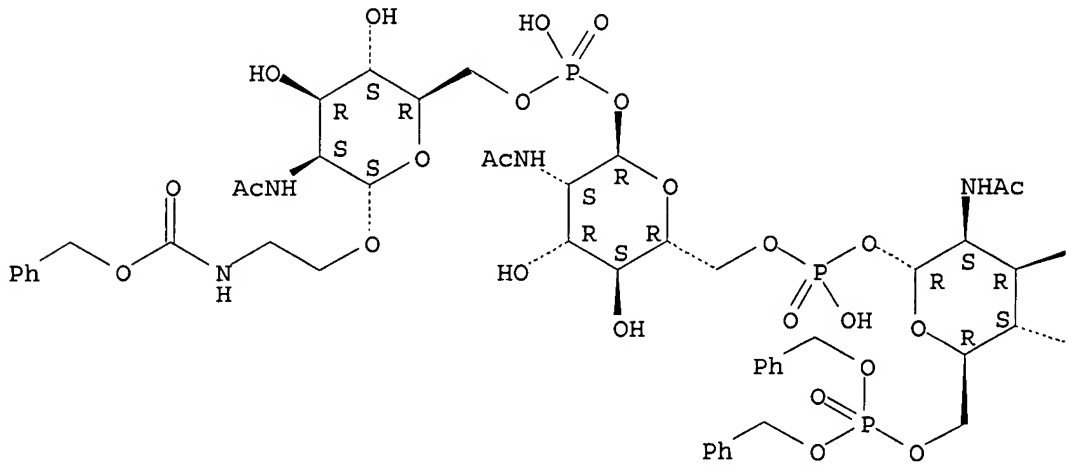
IT 870074-30-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of structures corresponding to the capsular polysaccharide of Neisseria meningitidis group A)

RN 870074-30-9 CAPLUS
CN Carbamic acid, [2-[[O-2-(acetylamino)-6-O-[bis(phenylmethoxy)phosphinyl]-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-O-2-

(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-
2-(acetylamino)-2-deoxy-α-D-mannopyranosyl]oxy]ethyl]-, phenylmethyl
ester, disodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



●2 Na

PAGE 1-B

OH

OH

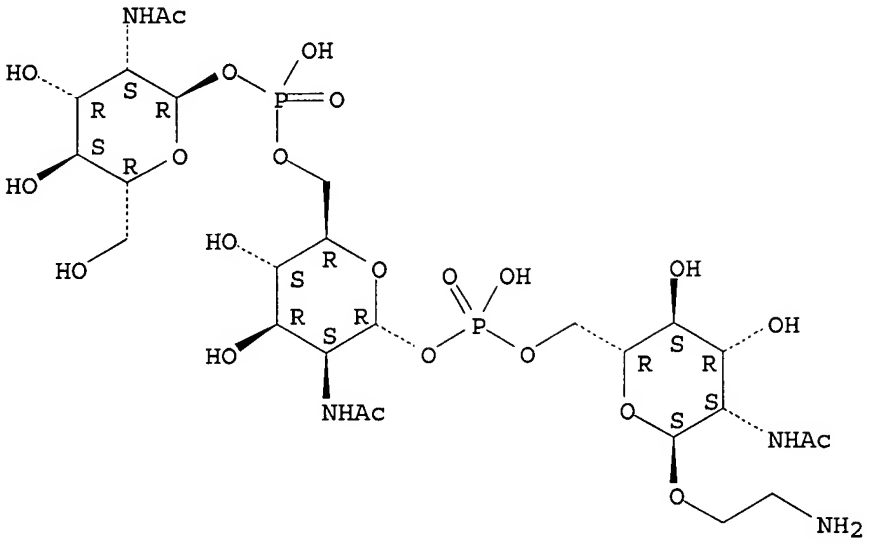
IT 497096-09-0P 870074-31-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of structures corresponding to the capsular
polysaccharide of Neisseria meningitidis
group A)
RN 497096-09-0 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl O-2-(acetylamino)-2-deoxy-α-
D-mannopyranosyloxyphosphinico-(1→6)-O-2-(acetylamino)-2-deoxy-
α-D-mannopyranosyloxyphosphinico-(1→6)-2-(acetylamino)-2-
deoxy-, compd. with N,N-diethylethanamine (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 497096-08-9

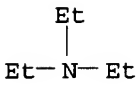
CMF C26 H48 N4 O22 P2

Absolute stereochemistry.



CM 2

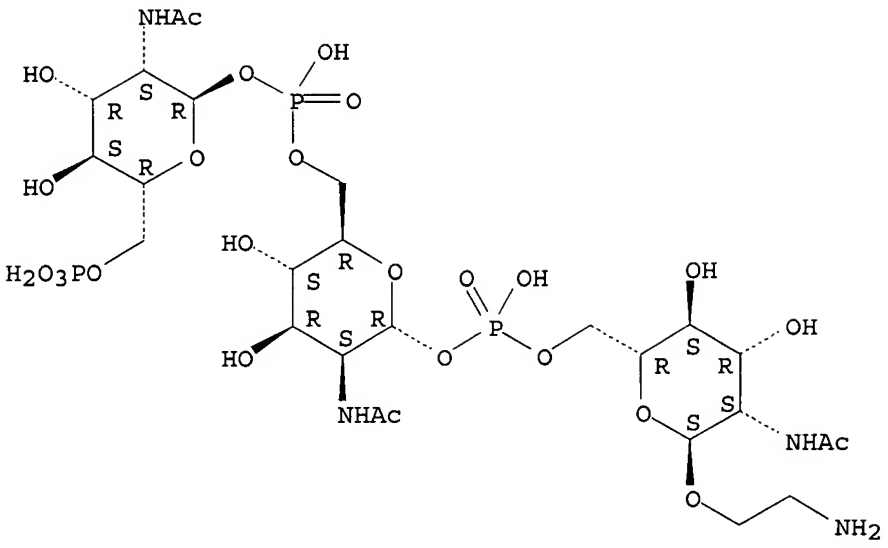
CRN 121-44-8
CMF C6 H15 N



RN 870074-31-0 CAPLUS
CN α-D-Mannopyranoside, 2-aminoethyl O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyloxyphosphinico-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyloxyphosphinico-(1→6)-2-(acetylamino)-2-deoxy-, trisodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

PAGE 1-A



PAGE 2-A

●3 Na

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:438453 CAPLUS
DOCUMENT NUMBER: 143:133613
TITLE: Synthesis of the phosphono analogue of the dimeric subunit of Neisseria meningitidis type A capsular polysaccharide
AUTHOR(S): Torres-Sanchez, M. Isabel; Draghetti, Veronica; Panza, Luigi; Lay, Luigi; Russo, Giovanni
CORPORATE SOURCE: Dipartimento di Chimica Organica e Industriale and Centro Interdisciplinare Studi Bio-molecolari e Applicazioni Industriali (CISI), Universita degli Studi di Milano, Milan, 20133, Italy
SOURCE: Synlett (2005), (7), 1147-1151
CODEN: SYNLES; ISSN: 0936-5214
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:133613

AB The development of a glycoconjugate vaccine against N. meningitidis type A bacterium is greatly hampered by the chemical lability of the phosphodiester bridges joining the N-acetyl mannosamine repeating units of its capsular polysaccharide. We describe the first synthesis of the phosphon disaccharide α-D-ManpNAc-[1→CH2-P(O)(O-)→6]-β-D-ManpNAc- (1→O) (CH2)3NH2 as a stable analog of the corresponding phosphate-bridged disaccharide. The key phosphonoester linkage is obtained by condensation of monosaccharide building blocks under Mitsunobu conditions. Moreover, the protected precursor of the target compound is suitably designed to allow further elongation and synthesis of higher oligomers.

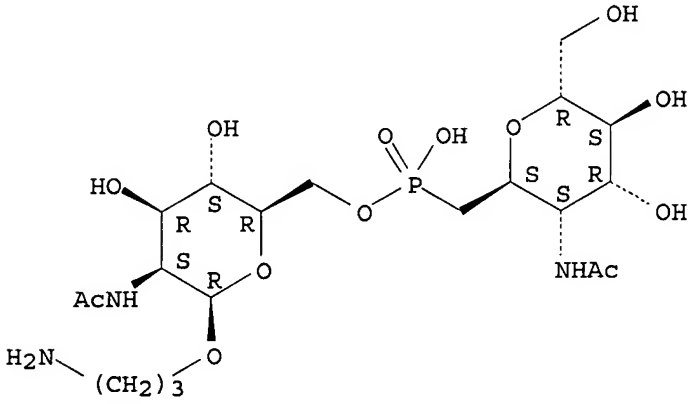
IT 858109-10-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of a mannopyranosyl phosphono analog related to the

phosphate-bridged disaccharide repeating unit of Neisseria meningitidis type A capsular polysaccharide
)

RN 858109-10-1 CAPLUS

CN β-D-Mannopyranoside, 3-aminopropyl 2-(acetylamino)-2-deoxy-, 6-ester with 5-(acetylamino)-2,6-anhydro-5,7-dideoxy-7-phosphono-D-glycero-D-manno-heptitol, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● Na

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:142987 CAPLUS

DOCUMENT NUMBER: 140:180124

TITLE: Engineered meningococcal strains comprising LOS subunit or outer membrane vesicle with downregulated or deleted PorA, OpA and/or OpC for use as neisserial vaccines

INVENTOR(S): Biemans, Ralph; Denoel, Philippe; Feron, Christiane; Goraj, Karine; Poolman, Jan; Weynants, Vincent

PATENT ASSIGNEE(S): Glaxosmithkline Biologicals SA, Belg.

SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004014417	A2	20040219	WO 2003-EP8568	20030731
WO 2004014417	A3	20040722		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2493124	A1	20040219	CA 2003-2493124	20030731
AU 2003260357	A1	20040225	AU 2003-260357	20030731
EP 1524992	A2	20050427	EP 2003-784152	20030731
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1688333	A	20051026	CN 2003-823703	20030731
JP 2006500962	T	20060112	JP 2005-506112	20030731
BR 2003013120	A	20070717	BR 2003-13120	20030731
ZA 2005000377	A	20060726	ZA 2005-377	20050114
ZA 2005000685	A	20060830	ZA 2005-685	20050124
NO 2005000421	A	20050330	NO 2005-421	20050125
MX 2005PA01349	A	20050428	MX 2005-PA1349	20050202
IN 2005KN00230	A	20060224	IN 2005-KN230	20050221
US 2006051379	A1	20060309	US 2005-523044	20050714
PRIORITY APPLN. INFO.:			GB 2002-18035	A 20020802
			GB 2002-18036	A 20020802
			GB 2002-18037	A 20020802
			GB 2002-18051	A 20020802
			GB 2002-20197	A 20020830
			GB 2002-20199	A 20020830
			GB 2002-25524	A 20021101
			GB 2002-25531	A 20021101
			GB 2002-30164	A 20021224
			GB 2002-30168	A 20021224
			GB 2002-30170	A 20021224
			GB 2003-5028	A 20030305
			WO 2003-EP8568	W 20030731

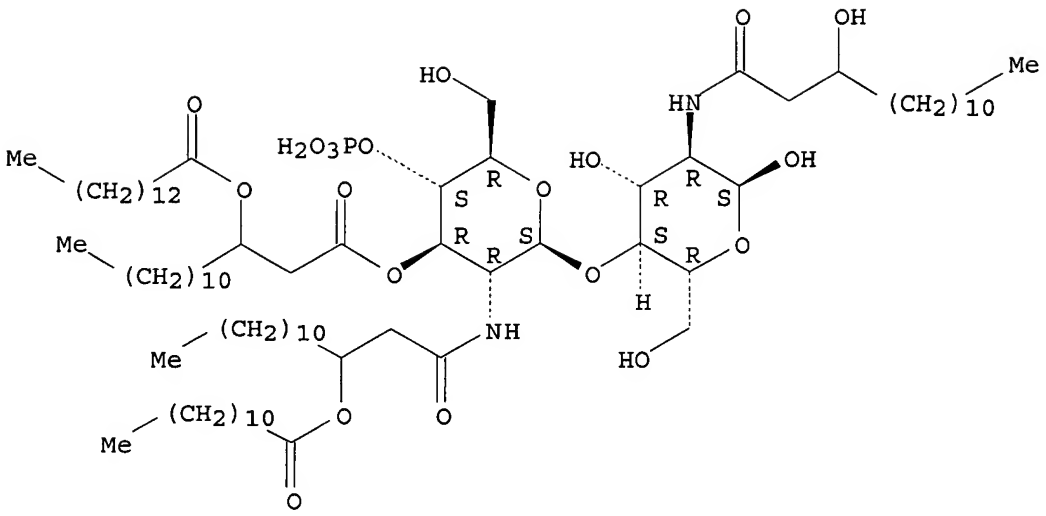
AB The present invention relates to the field of neisserial vaccine compns., their manufacture, and the use of such compns. in medicine. More particularly it relates to processes of making novel engineered meningococcal strains which are more suitable for the production of neisserial, in particular meningococcal, outer-membrane vesicle (or bleb) vaccines. Advantageous processes and vaccine products are also described based on the use of novel LOS subunit or meningococcal outer-membrane vesicle (or bleb) vaccines which have been rendered safer and/or more effective for use in human subjects. In particular combinations of gene downregulations are described such as PorA & OpA, PorA and OpC, OpA and OpC, and PorA and OpA and OpC; as well as gene upregulations are describe such as NspA, TbpA low, TbpA high, Hsf, Hap, OMP85, PilQ, NadA, LbpA, and MltA. Alternatively, or in addition, lgtB- is shown to be an optimal mutation for effectively and safely using L3 and/or L2 LOS in Neisseria vaccine compns. Bleb vaccines derived from lgtB- and capsular polysaccharide deficient meningococcal mutants are further described; as are advantageous methods of making bleb prepns. where LOS is to be retained as an important antigen.

IT 128478-31-9, 3D-MPL
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(engineered meningococcal strains comprising LOS subunit or outer membrane vesicle with downregulated or deleted PorA, OpA and/or OpC for use as neisserial vaccines)

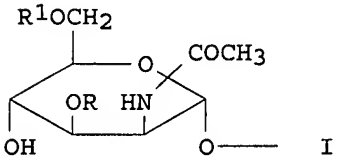
RN 128478-31-9 CAPLUS

CN α-D-Glucopyranose, 2-deoxy-4-O-[2-deoxy-2-[[1-oxo-3-[(1-oxododecyl)oxy]tetradecyl]amino]-3-O-[1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]-4-O-phosphono-β-D-glucopyranosyl]-2-[(3-hydroxy-1-oxotetradecyl)amino]- (CA INDEX NAME)

Absolute stereochemistry.



L9 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:439976 CAPLUS
DOCUMENT NUMBER: 125:162473
TITLE: Determination of the size and degree of acetyl substitution of oligosaccharides from Neisseria meningitidis Group A by ion-spray mass spectrometry
AUTHOR(S): Cescutti, Paola; Bigio, Massimo; Guarnieri, Valentina
CORPORATE SOURCE: Dip. Biochim., Biofis. Chim. Macromol., Trieste, 34127, Italy
SOURCE: Biochemical and Biophysical Research Communications (1996), 224(2), 444-450
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



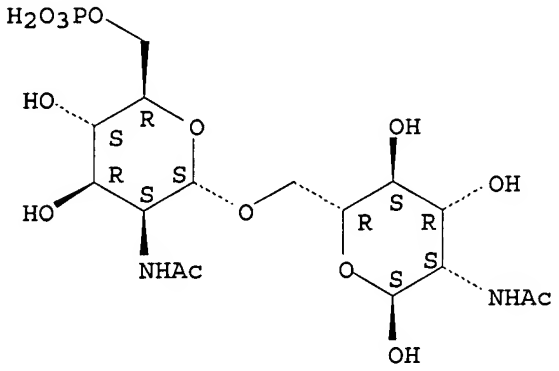
AB The capsular polysaccharide produced by N. meningitidis group A has the structure I (where R = H or O-Ac and R' = H2O3P or α-D-pManNAc). This polysaccharide was partially hydrolyzed with HOAc, and the oligomers obtained were separated by fast-performance liquid chromatog. Six fractions were collected and characterized by ion-spray mass spectrometry in the pos.-ion mode. This soft-ionization technique established the size of the obtained oligosaccharides and the degree of O-Ac substitution for each fraction.

IT 180146-06-9D, acetylated 180146-07-0D, acetylated
180146-08-1D, acetylated 180146-09-2D, acetylated
180146-10-5D, acetylated 180146-11-6D, acetylated
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(oligosaccharide acetyl substitution determination in Neisseria meningitidis group A by ion-spray mass spectrometry)

RN 180146-06-9 CAPLUS

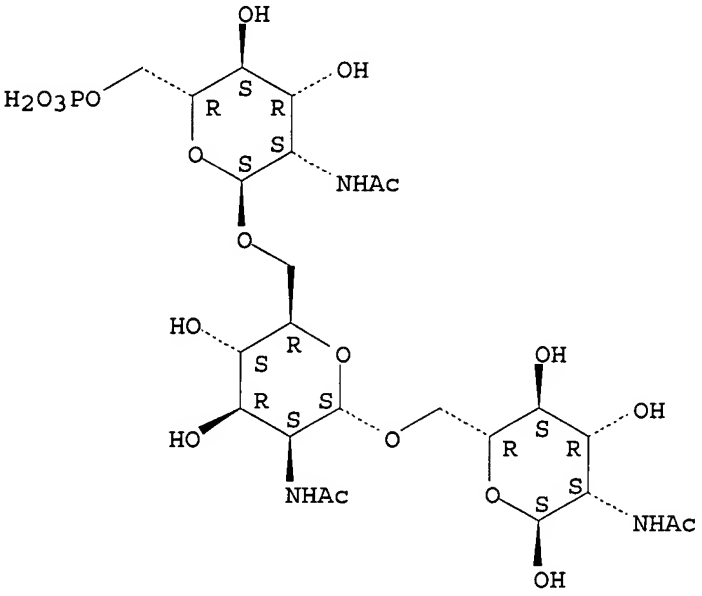
CN α-D-Mannopyranose, 2-(acetylamino)-6-O-[2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl]-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 180146-07-0 CAPLUS
CN α-D-Mannopyranose, O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

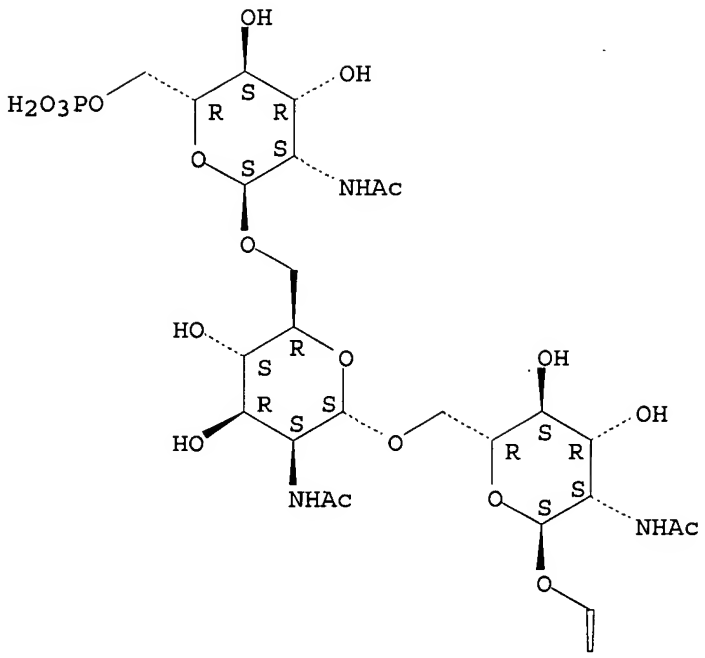
Absolute stereochemistry.



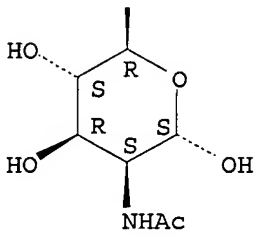
RN 180146-08-1 CAPLUS
CN α-D-Mannopyranose, O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



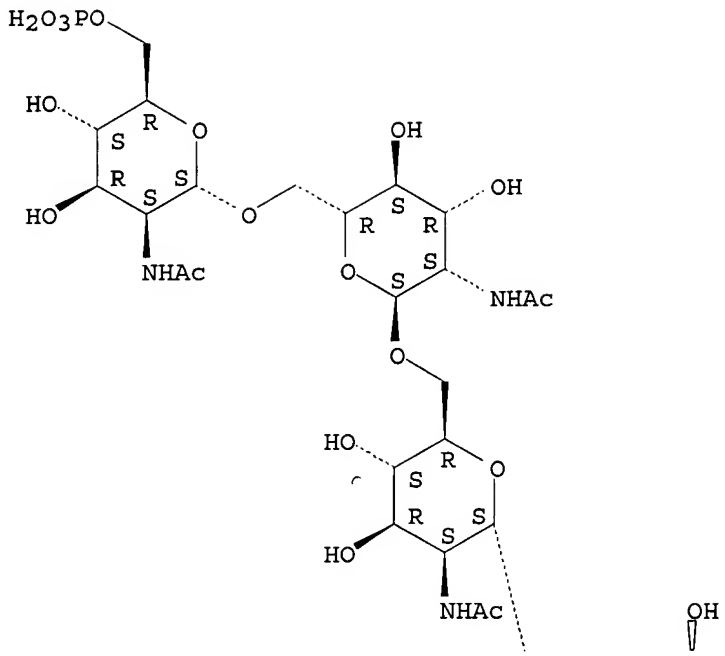
PAGE 2-A



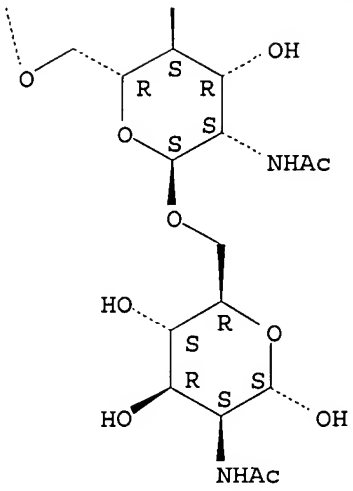
RN 180146-09-2 CAPLUS
CN α-D-Mannopyranose, O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



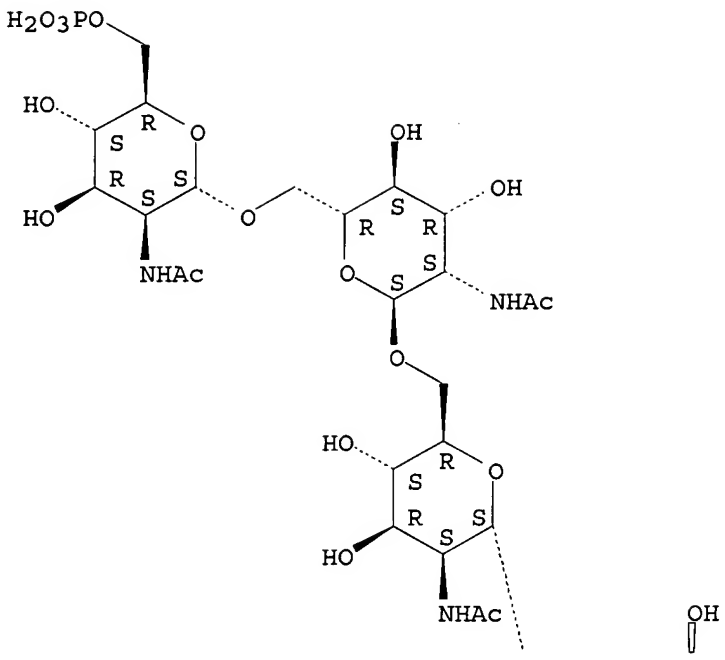
PAGE 2-A



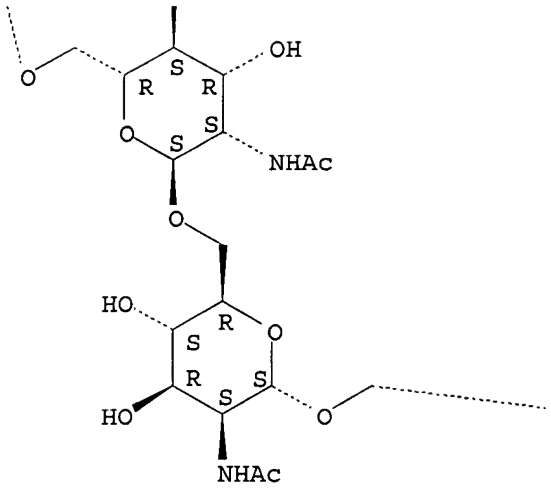
RN 180146-10-5 CAPLUS
CN α-D-Mannopyranose, O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

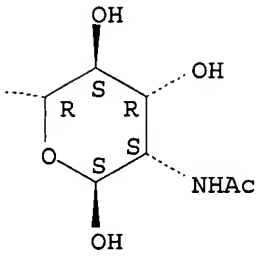
Absolute stereochemistry.

PAGE 1-A



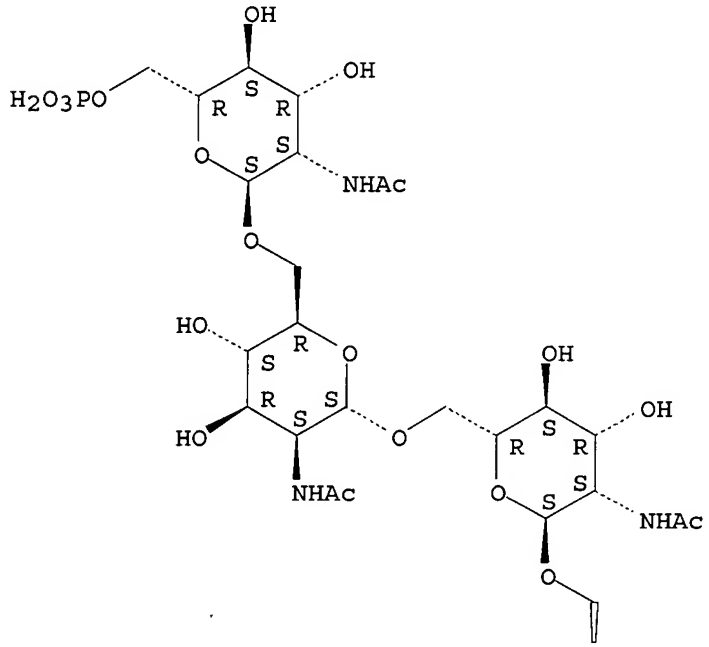
PAGE 2-A



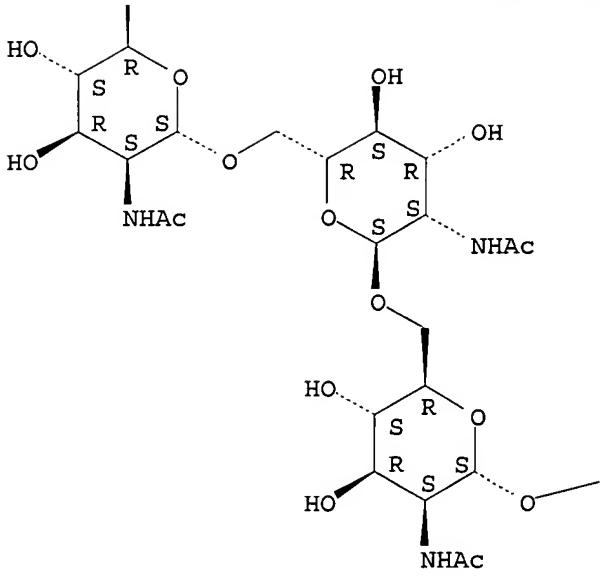


RN 180146-11-6 CAPLUS
CN α-D-Mannopyranose, O-2-(acetylamino)-2-deoxy-6-O-phosphono-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-O-2-(acetylamino)-2-deoxy-α-D-mannopyranosyl-(1→6)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

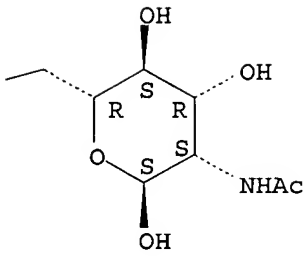
Absolute stereochemistry.



PAGE 2-A



PAGE 2-B



L9 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:612074 CAPLUS

DOCUMENT NUMBER: 123:134286

TITLE: Construction of Neisseria meningitidis strains carrying multiple chromosomal copies of the porA gene for use in the production of a multivalent outer membrane vesicle vaccine

AUTHOR(S): Ley, Peter van der; Biezen, Jenny van der; Poolman, Jan T.

CORPORATE SOURCE: National Institute Public Health and Environmental Protection, Bilthoven, 3720 BA, Neth.

SOURCE: Vaccine (1995), 13(4), 401-7
CODEN: VACCDE; ISSN: 0264-410X
DOCUMENT TYPE: Journal
LANGUAGE: English

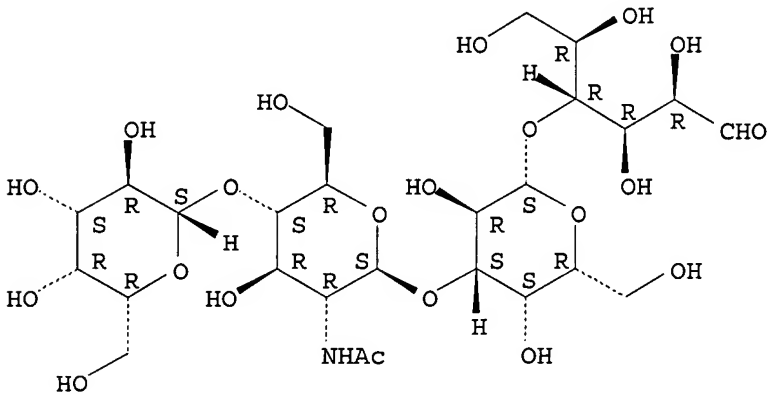
AB Starting with Neisseria meningitidis strain H44/76, a set of strains was constructed for use in production of a multivalent outer membrane vesicle vaccine. The aim was to remove unwanted outer membrane components and at the same time to improve the range of protection. This was accomplished through transformation with plasmid constructs made in Escherichia coli and their homologous recombination into the meningococcal chromosome. Deletion of the cps locus resulted in loss of expression of the group B capsular polysaccharide as well as the lacto-N-neotetraose structure in lipopolysaccharide. Deletion of the porB gene abolished expression of the class 3 outer membrane protein. Addnl. copies of the porA gene, encoding the immunodominant class 1 outer membrane protein, were inserted into one of the opa genes and into the rmpM gene encoding the class 4 outer membrane protein. This construction was done with three sets of porA alleles, resulting in three trivalent strains, each of which expressed a different combination of class 1 epitopes.

IT 13007-32-4, Lacto-N-neotetraose
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(in construction of Neisseria meningitidis vaccine, deletion of the cps locus resulted in loss of expression of the group B capsular polysaccharide as well as the lacto-N-neotetraose structure in lipopolysaccharide)

RN 13007-32-4 CAPLUS

CN D-Glucose, O-β-D-galactopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-β-D-galactopyranosyl-(1→4)- (CA INDEX NAME)

Absolute stereochemistry.



L9 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1984:586497 CAPLUS
DOCUMENT NUMBER: 101:186497
TITLE: Structure, conformation and immunology of sialic acid-containing polysaccharides of human pathogenic bacteria
AUTHOR(S): Jennings, Harold J.; Katzenellenbogen, Ewa; Lugowski, Czeslaw; Michon, Francis; Roy, Rene; Kasper, Dennis L.
CORPORATE SOURCE: Div. Biol. Sci., Natl. Res. Counc. Canada, Ottawa, ON, K1A 0R6, Can.
SOURCE: Pure and Applied Chemistry (1984), 56(7), 893-905
CODEN: PACHAS; ISSN: 0033-4545
DOCUMENT TYPE: Journal

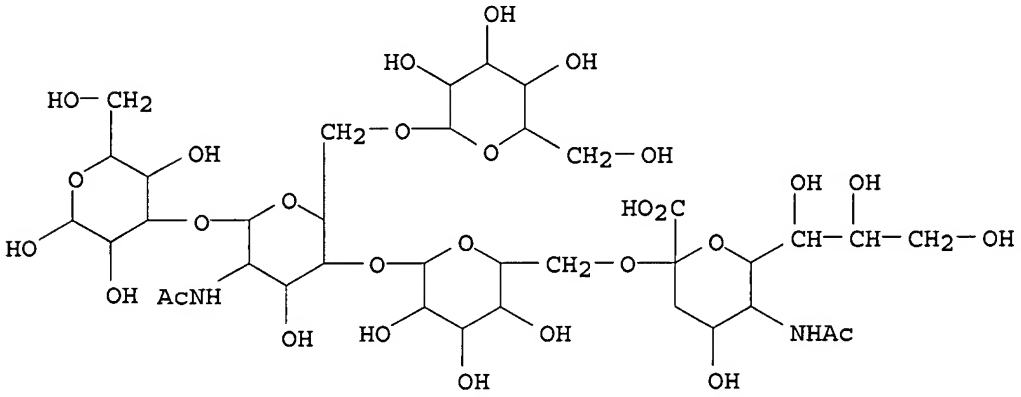
LANGUAGE: English

AB Capsular polysaccharides of types Ia, Ib, II, and III group B Streptococcus and groups B and C Neisseria meningitidis contain terminal sialic acid in different mol. environments. Experimentation has identified sialic acid as an important factor in the virulence of these organisms and in the human antibody response to their capsular polysaccharide antigens. Although terminal sialic acid is not normally immunogenic it controls the determinants which are responsible for the production of protective antibodies. Using immunol. and NMR spectroscopic techniques on the native and specifically modified polysaccharides, a number of these sialic acid-controlled determinants were identified and located. These determinants are only formed in structures which can accommodate long-range interactions between sialic acid and other remote glycosyl residues. The carboxylate group of sialic acid is essential for these interactions to occur.

IT 73605-94-4 84280-28-4 84979-92-0
RL: BIOL (Biological study)
((1→4) repeating unit, of bacterial capsular polysaccharide)

RN 73605-94-4 CAPLUS

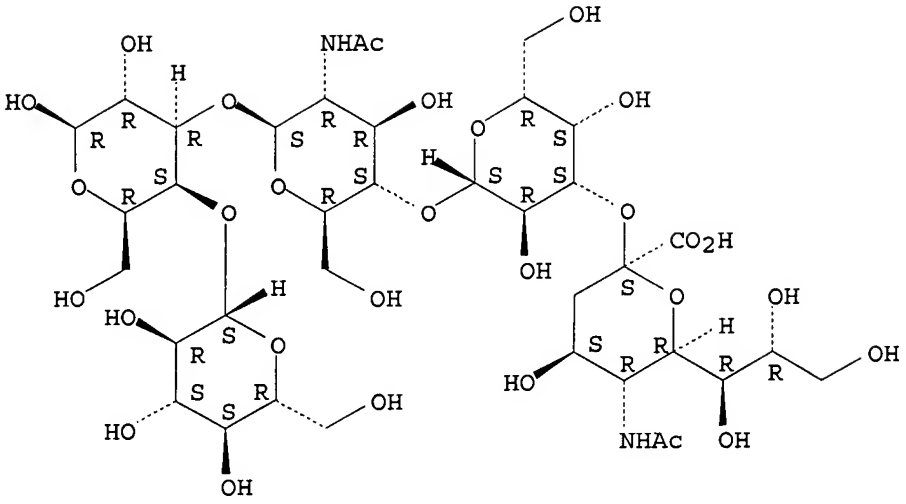
CN β-D-Galactopyranose, O-(N-acetyl-α-neuraminosyl)-(2→6)-O-β-D-galactopyranosyl-(1→4)-O-[β-D-glucopyranosyl-(1→6)]-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)- (9CI) (CA INDEX NAME)



RN 84280-28-4 CAPLUS

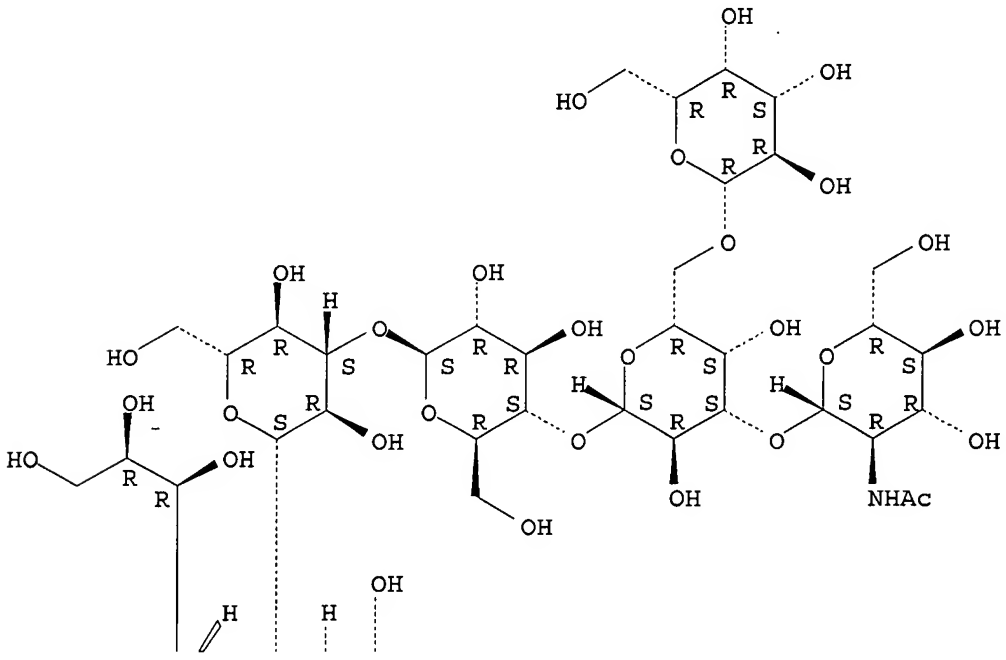
CN β-D-Galactopyranose, O-(N-acetyl-α-neuraminosyl)-(2→3)-O-β-D-galactopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-[β-D-glucopyranosyl-(1→4)]- (9CI) (CA INDEX NAME)

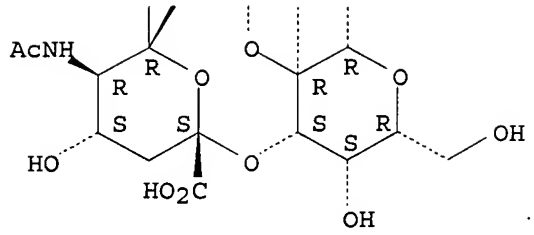
Absolute stereochemistry.



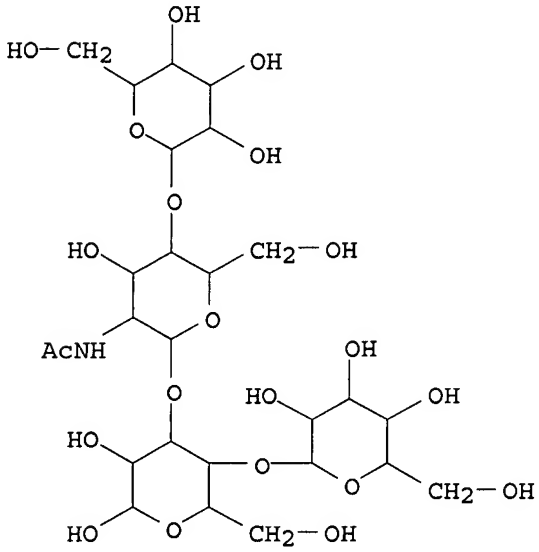
RN 84979-92-0 CAPLUS
CN β-D-Galactopyranose, O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-[β-D-galactopyranosyl-(1→6)]-O-β-D-galactopyranosyl-(1→4)-O-β-D-glucopyranosyl-(1→3)-O-β-D-glucopyranosyl-(1→2)-O-[N-acetyl-α-neuraminosyl-(2→3)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

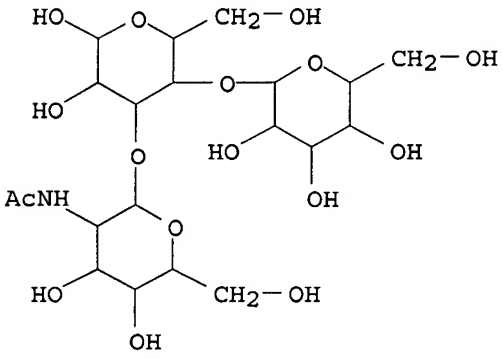




IT 92279-93-1 92344-55-3
RL: BIOL (Biological study)
(repeating unit, of bacterial capsular polysaccharide
)
RN 92279-93-1 CAPLUS
CN β-D-Galactopyranose, O-β-D-galactopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-[β-D-glucopyranosyl-(1→4)]- (9CI) (CA INDEX NAME)



RN 92344-55-3 CAPLUS
CN β-D-Galactopyranose, O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→3)-O-[β-D-glucopyranosyl-(1→4)]-(9CI) (CA INDEX NAME)



L17 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:780563 CAPLUS
DOCUMENT NUMBER: 141:294673
TITLE: Capsular polysaccharide -staphylococcal surface adhesin carrier protein conjugates as vaccines for immunization against nosocomial infections
INVENTOR(S): Pavliak, Viliam; Baker, Steven Morris; Pillai, Subramonia Padmanaba
PATENT ASSIGNEE(S): Wyeth Holdings Corporation, USA; Wyeth Corp.
SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004080490	A2	20040923	WO 2004-US6661	20040304
WO 2004080490	A3	20041028		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004220590	A1	20040923	AU 2004-220590	20040304
CA 2517439	A1	20040923	CA 2004-2517439	20040304
EP 1601381	A2	20051207	EP 2004-717417	20040304
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK				
BR 2004008167	A	20060321	BR 2004-8167	20040304
CN 1787839	A	20060614	CN 2004-80012265	20040304
JP 2006519870	T	20060831	JP 2006-509140	20040304
MX 2005PA09351	A	20060308	MX 2005-PA9351	20050902
IN 2005KN01865	A	20061027	IN 2005-KN1865	20050919
US 2007087014	A1	20070419	US 2006-548507	20060613
US 2007141077	A1	20070621	US 2006-593481	20061107

PRIORITY APPLN. INFO.:	US 2003-452728P	P	20030307
	WO 2004-US6661	W	20040304
	US 2006-548507	A3	20060613

AB Immunogenic polysaccharide-protein conjugates having a polysaccharide antigen (or its oligosaccharide fragment representing one or more antigenic epitopes) derived from a nosocomial pathogen conjugated to a staphylococcal surface adhesin carrier protein are used in immunogenic compns. to elicit antibody responses to both the polysaccharide antigen and the staphylococcal surface adhesion carrier protein. Such immunogenic compns. are used to immunize against diseases caused by Staphylococcal aureus, Staphylococcal epidermidis or other nosocomial pathogens.

IT 236093-12-2
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(capsular polysaccharide-staphylococcal surface adhesin carrier protein conjugates as vaccines for immunization against nosocomial infections)

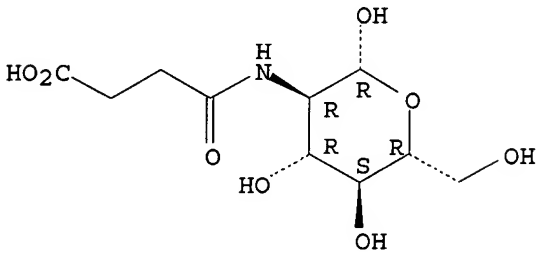
RN 236093-12-2 CAPLUS
CN β-D-Glucopyranose, 2-[(3-carboxy-1-oxopropyl)amino]-2-deoxy-,

homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 129778-15-0
CMF C10 H17 N O8

Absolute stereochemistry.



L17 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:142987 CAPLUS
DOCUMENT NUMBER: 140:180124
TITLE: Engineered meningococcal strains comprising LOS subunit or outer membrane vesicle with downregulated or deleted PorA, OpA and/or OpC for use as neisserial vaccines
INVENTOR(S): Biemans, Ralph; Denoel, Philippe; Feron, Christiane; Goraj, Karine; Poolman, Jan; Weynants, Vincent
PATENT ASSIGNEE(S): Glaxosmithkline Biologicals SA, Belg.
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004014417	A2	20040219	WO 2003-EP8568	20030731
WO 2004014417	A3	20040722		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2493124	A1	20040219	CA 2003-2493124	20030731
AU 2003260357	A1	20040225	AU 2003-260357	20030731
EP 1524992	A2	20050427	EP 2003-784152	20030731
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1688333	A	20051026	CN 2003-823703	20030731
JP 2006500962	T	20060112	JP 2005-506112	20030731
BR 2003013120	A	20070717	BR 2003-13120	20030731
ZA 2005000377	A	20060726	ZA 2005-377	20050114
ZA 2005000685	A	20060830	ZA 2005-685	20050124
NO 2005000421	A	20050330	NO 2005-421	20050125
MX 2005PA01349	A	20050428	MX 2005-PA1349	20050202

IN 2005KN00230	A	20060224	IN 2005-KN230		20050221
US 2006051379	A1	20060309	US 2005-523044		20050714
PRIORITY APPLN. INFO.:			GB 2002-18035	A	20020802
			GB 2002-18036	A	20020802
			GB 2002-18037	A	20020802
			GB 2002-18051	A	20020802
			GB 2002-20197	A	20020830
			GB 2002-20199	A	20020830
			GB 2002-25524	A	20021101
			GB 2002-25531	A	20021101
			GB 2002-30164	A	20021224
			GB 2002-30168	A	20021224
			GB 2002-30170	A	20021224
			GB 2003-5028	A	20030305
			WO 2003-EP8568	W	20030731

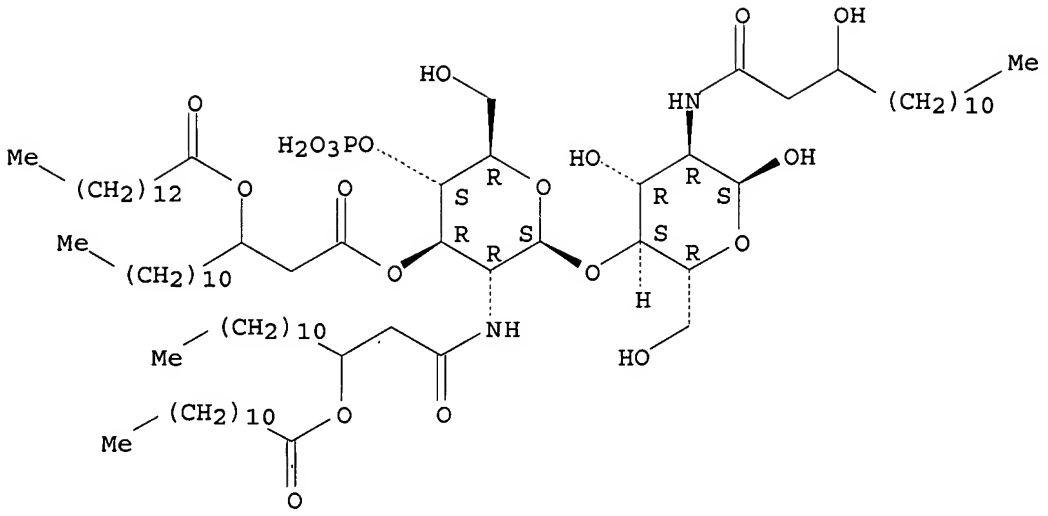
AB The present invention relates to the field of neisserial vaccine compns., their manufacture, and the use of such compns. in medicine. More particularly it relates to processes of making novel engineered meningococcal strains which are more suitable for the production of neisserial, in particular meningococcal, outer-membrane vesicle (or bleb) vaccines. Advantageous processes and vaccine products are also described based on the use of novel LOS subunit or meningococcal outer-membrane vesicle (or bleb) vaccines which have been rendered safer and/or more effective for use in human subjects. In particular combinations of gene downregulations are described such as PorA & OpA, PorA and OpC, OpA and OpC, and PorA and OpA and OpC; as well as gene upregulations are describe such as NspA, TbpA low, TbpA high, Hsf, Hap, OMP85, PilQ, NadA, LbpA, and MltA. Alternatively, or in addition, lgtB- is shown to be an optimal mutation for effectively and safely using L3 and/or L2 LOS in Neisseria vaccine compns. Bleb vaccines derived from lgtB- and capsular polysaccharide deficient meningococcal mutants are further described; as are advantageous methods of making bleb prepns. where LOS is to be retained as an important antigen.

IT 128478-31-9, 3D-MPL
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(engineered meningococcal strains comprising LOS subunit or outer membrane vesicle with downregulated or deleted PorA, OpA and/or OpC for use as neisserial vaccines)

RN 128478-31-9 CAPLUS

CN α-D-Glucopyranose, 2-deoxy-4-O-[2-deoxy-2-[[1-oxo-3-[(1-oxododecyl)oxy]tetradecyl]amino]-3-O-[1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]-4-O-phosphono-β-D-glucopyranosyl]-2-[(3-hydroxy-1-oxotetradecyl)amino]- (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:658984 CAPLUS
DOCUMENT NUMBER: 133:361711
TITLE: Vaccine potential of poly-1-6 β-D-N-succinylglucosamine, an immunoprotective surface polysaccharide of Staphylococcus aureus and Staphylococcus epidermidis
AUTHOR(S): Mckenney, D.; Pouliot, K.; Wang, Y.; Murthy, V.; Ulrich, M.; Doring, G.; Lee, J. C.; Goldmann, D. A.; Pier, G. B.
CORPORATE SOURCE: Brigham and Women's Hospital, Department of Medicine, Channing Laboratory, Harvard Medical School, Boston, MA, 02115-5804, USA
SOURCE: Journal of Biotechnology (2000), 83(1,2), 37-44
CODEN: JBITD4; ISSN: 0168-1656
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Staphylococcus aureus and S. epidermidis are among the most common causes of nosocomial infection, and S. aureus is also of major concern to human health due to its occurrence in community-acquired infections. These staphylococcal species are also major pathogens for domesticated animals. We have previously identified poly-N-succinyl β-1-6 glucosamine (PNSG) as the chemical form of the S. epidermidis capsular polysaccharide/adhesin (PS/A) which mediates adherence of coagulase-neg. staphylococci (CoNS) to biomaterials, serves as the capsule for strains of CoNS that express PS/A, and is a target for protective antibodies. We have recently found that PNSG is made by S. aureus as well, where it is an environmentally regulated, in vivo-expressed surface polysaccharide and similarly serves as a target for protective immunity. Only a minority of fresh human clin. isolates of S. aureus elaborate PNSG in vitro but most could be induced to do so under specific in vitro growth conditions. However, by immunofluorescence microscopy, S. aureus cells in infected human sputa and lung elaborated PNSG. The ica genes, previously shown to encode proteins in CoNS that synthesize PNSG, were found by PCR in all S. aureus strains examined, and immunogenic and protective PNSG could be isolated from S. aureus. Active and passive immunization of mice with PNSG protected them against metastatic kidney infections after i.v. inoculation with eight phenotypically PNSG-neg. S. aureus. Isolates recovered from kidneys expressed PNSG, but expression was lost with in vitro culture. Strong antibody responses to PNSG were elicited in S. aureus infected mice, and a PNSG-capsule was observed by electron microscopy on isolates directly plated from infected kidneys. PNSG represents a

previously unidentified surface polysaccharide of S. aureus that is elaborated during human and animal infection and is a prominent target for protective antibodies.

IT 236093-12-2
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(vaccine potential of poly-1-6 β-D-N-succinylglucosamine, an immunoprotective surface polysaccharide of Staphylococcus aureus and Staphylococcus epidermidis)

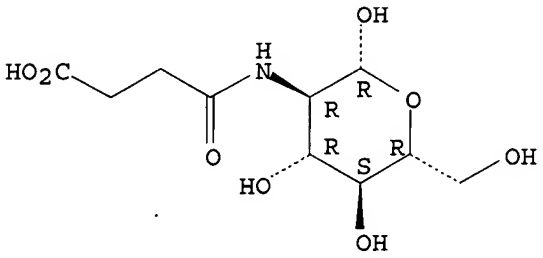
RN 236093-12-2 CAPLUS

CN β-D-Glucopyranose, 2-[(3-carboxy-1-oxopropyl)amino]-2-deoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 129778-15-0
CMF C10 H17 N O8

Absolute stereochemistry.



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

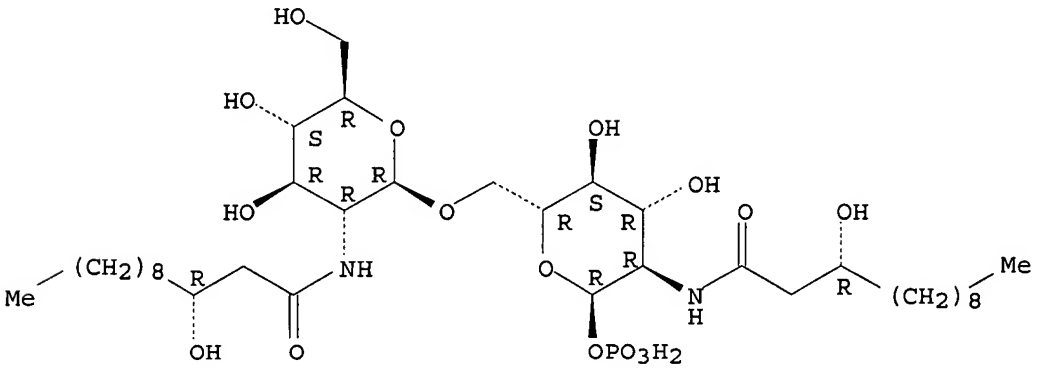
L19 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:731437 CAPLUS
DOCUMENT NUMBER: 138:68697
TITLE: Determination of the structure of the lipid A fraction from the lipopolysaccharide of Pseudomonas cichorii by means of NMR and MALDI-TOF mass spectrometry
AUTHOR(S): Molinaro, Antonio; Silipo, Alba; Lanzetta, Rosa; Parrilli, Michelangelo; Malvagna, Paola; Evidente, Antonio; Surico, Giuseppe
CORPORATE SOURCE: Dipartimento di Chimica Organica e Biochimica, Universita di Napoli Federico II, Complesso Universitario Monte Sant' Angelo, Naples, 80126, Italy
SOURCE: European Journal of Organic Chemistry (2002), (18), 3119-3125
CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The chemical structure of lipid A from the lipopolysaccharide of the plant-associated bacterium Pseudomonas cichorii, was elucidated by compositional anal. and spectroscopic methods (MALDI-TOF and 2D NMR). The sugar's backbone was constituted by the β-(1'→6)-linked D-glucosamine disaccharide 1-phosphate. The lipid A fraction showed remarkable heterogeneity with respect to the fatty acid and phosphate composition The major species are hexaacylated and pentaacylated lipid A, bearing the (R)-3-hydroxydodecanoic acid [C12:0 (3OH)] in amide linkage and an (R)-3-hydroxydecanoic [C10:0 (3OH)] in ester linkage while the secondary fatty acids are present as C12:0 and C12:0 (2-OH). A nonstoichiometric phosphate substitution at position C-4' of the distal GlcN was detected. Interestingly, the pentaacyl lipid A is lacking a primary fatty acid, namely the C10:0 (3-OH) at position C-3'. A potential biol. meaning of this peculiar lipid A is also suggested.

IT 481703-62-2D, phosphate derivs. 481703-65-5D, hydroxydecanoic acid derivs. 481703-68-8D, phosphate derivs. 481703-70-2D, derivs. with phosphate/hydroxydecanoic acid
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure of lipid A fraction from the lipopolysaccharide of Pseudomonas cichorii by means of NMR and MALDI-TOF mass spectrometry)

RN 481703-62-2 CAPLUS
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-3-hydroxy-1-oxododecyl]amino]-β-D-glucopyranosyl]-2-[[(3R)-3-hydroxy-1-oxododecyl]amino]-, 1-(dihydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

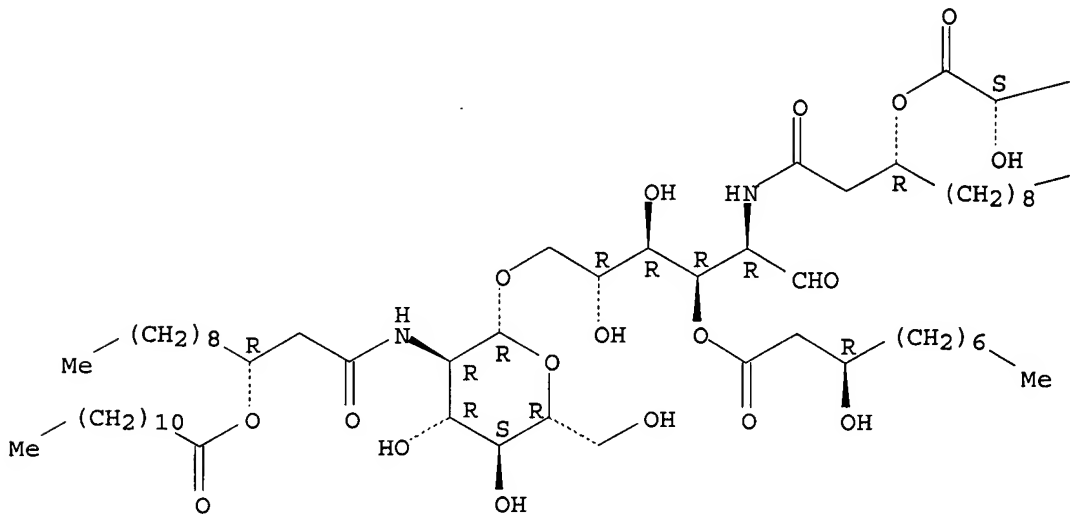


RN 481703-65-5 CAPLUS
CN D-Glucose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-1-oxo-3-[(1-

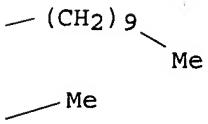
oxododecyl)oxy]dodecyl]amino]-β-D-glucopyranosyl]-2-[[(3R)-3-[[(2S)-2-hydroxy-1-oxododecyl]oxy]-1-oxododecyl]amino]-, 3-[(3R)-3-hydroxydecanoate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

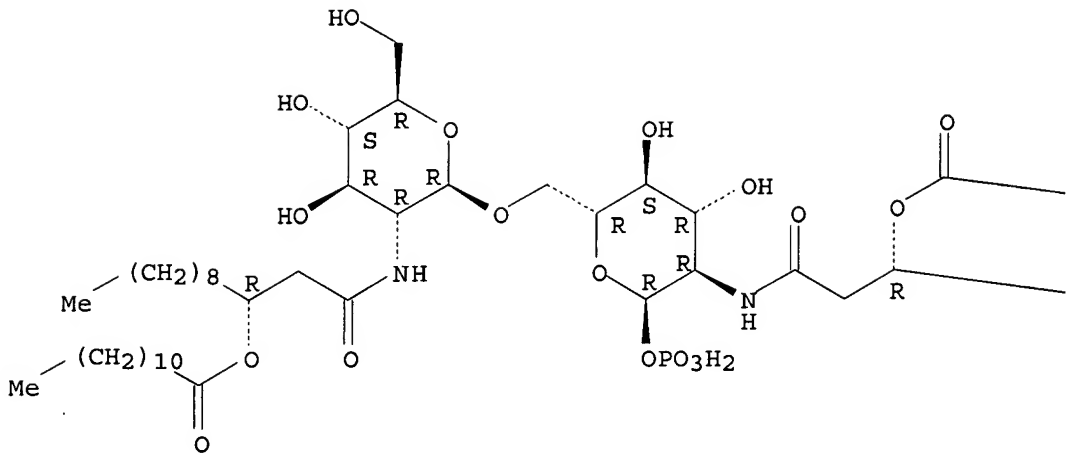


RN 481703-68-8 CAPLUS

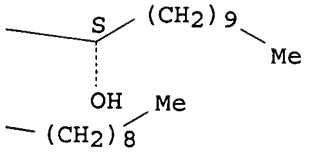
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-1-oxo-3-[(1-oxododecyl)oxy]dodecyl]amino]-β-D-glucopyranosyl]-2-[[(3R)-3-[[(2S)-2-hydroxy-1-oxododecyl]oxy]-1-oxododecyl]amino]-, 1-(dihydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



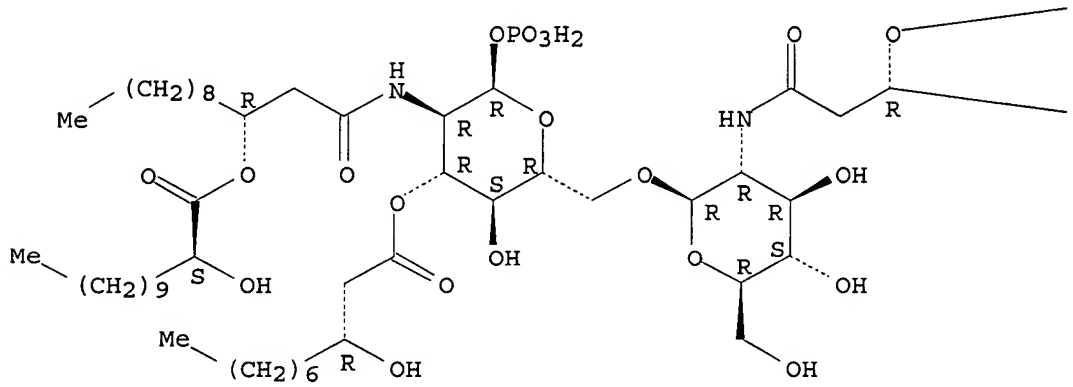
PAGE 1-B

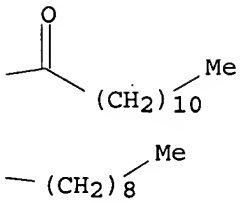


RN 481703-70-2 CAPLUS
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-1-oxo-3-[(1-oxododecyl)oxy]dodecyl]amino]-β-D-glucopyranosyl]-2-[[(3R)-3-[[(2S)-2-hydroxy-1-oxododecyl]oxy]-1-oxododecyl]amino]-, 1-(dihydrogen phosphate) 3-[(3R)-3-hydroxydecanoate] (9CI). (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

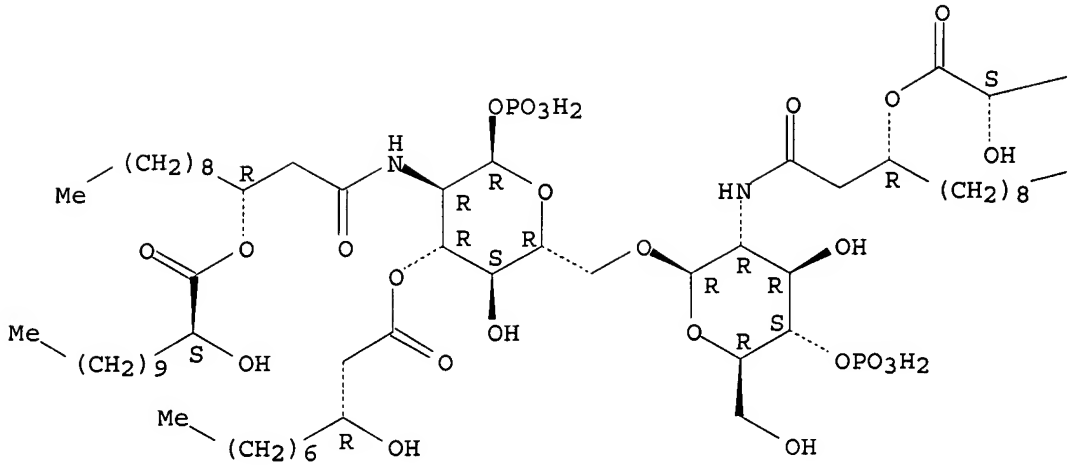
L19 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:441806 CAPLUS
DOCUMENT NUMBER: 137:182008
TITLE: Structural determination of lipid A of the lipopolysaccharide from Pseudomonas reactans: a pathogen of cultivated mushrooms
AUTHOR(S): Silipo, Alba; Lanzetta, Rosa; Garozzo, Domenico; Cantore, Pietro Lo; Iacobellis, Nicola Sante; Molinaro, Antonio; Parrilli, Michelangelo; Evidente, Antonio
CORPORATE SOURCE: Dipartimento di Chimica Organica e Biochimica, Universita degli Studi di Napoli Federico II, Naples, I-80126, Italy
SOURCE: European Journal of Biochemistry (2002), 269(10), 2498-2505
CODEN: EJBCAI; ISSN: 0014-2956
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The chemical structure of lipid A from the lipopolysaccharide of the mushroom-associated bacterium Pseudomonas reactans, a pathogen of cultivated mushroom, was elucidated by compositional anal. and spectroscopic methods (MALDI-TOF and two-dimensional NMR). The sugar backbone was composed of the β-(1' → 6)-linked D-glucosamine disaccharide 1-phosphate. The lipid A fraction showed remarkable heterogeneity with respect to the fatty acid and phosphate composition The major species are hexacylated and pentacylated lipid A, bearing the (R)-3-hydroxydodecanoic acid [C12:0 (3OH)] in amide linkage and a (R)-3-hydroxydecanoic [C10:0 (3OH)] in ester linkage while the secondary fatty acids are present as C12:0 and/or C12:0 (2-OH). A nonstoichiometric phosphate substitution at position C-4' of the distal 2-deoxy-2-amino-glucose was detected. Interestingly, the pentacyl lipid A is lacking a primary fatty acid, namely the C10:0 (3-OH) at position C-3'. The potential biol. meaning of this peculiar lipid A is also discussed.

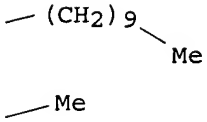
IT 452092-44-3
RL: PRP (Properties)
(lipid A in lipopolysaccharide from the cultivated mushroom pathogen Pseudomonas reactans)
RN 452092-44-3 CAPLUS
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-3-[[(2S)-2-hydroxy-1-oxododecyl]oxy]-1-oxododecyl]amino]-4-O-phosphono-β-D-glucopyranosyl]-2-[[(3R)-3-[[(2S)-2-hydroxy-1-oxododecyl]oxy]-1-oxododecyl]amino]-, 1-(dihydrogen phosphate) 3-[(3R)-3-hydroxydecanoate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:359503 CAPLUS
DOCUMENT NUMBER: 127:92476
TITLE: Structural characterization of the lipids A of three Bordetella bronchiseptica strains: variability of fatty acid substitution
AUTHOR(S): Zarrouk, H.; Karibian, D.; Bodie, S.; Perry, M. B.; Richards, J. C.; Caroff, M.
CORPORATE SOURCE: URA 1116 du Centre National de la Recherche Scientifique, Universite de Paris-Sud, Orsay, F-91405, Fr.
SOURCE: Journal of Bacteriology (1997), 179(11), 3756-3760
CODEN: JOBAAY; ISSN: 0021-9193
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

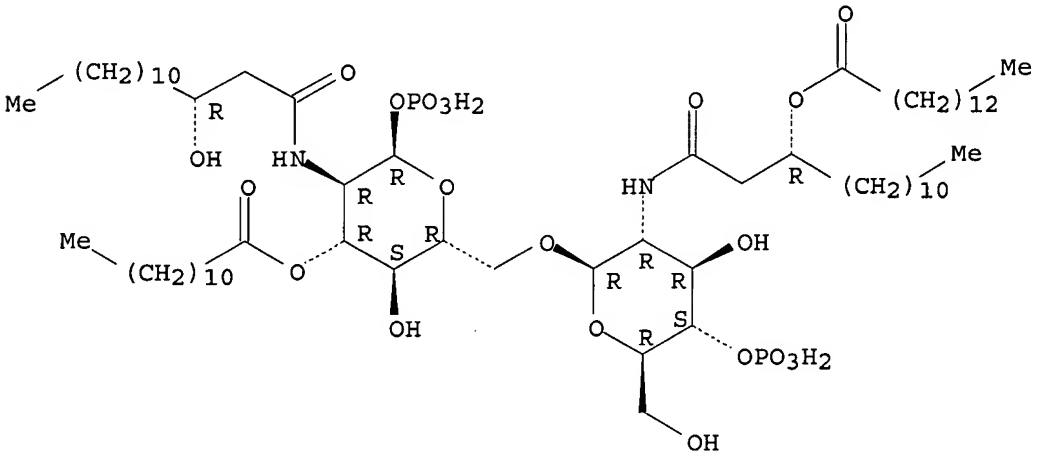
AB The structures of lipids A isolated from the lipopolysaccharides (LPSs; endotoxins) of 3 different pathogenic B. bronchiseptica strains were investigated by chemical composition and methylation anal., gas chromatog.-mass spectrometry, NMR, and plasma desorption mass spectrometry (PDMS). The analyses revealed that the LPSs contain the classical lipid A bisphosphorylated β-(1→6)-linked D-glucosamine disaccharide with hydroxytetradecanoic acid in amide linkages. Their structures differ from that of the lipid A of Bordetella pertussis endotoxin by the replacement of hydroxydecanoic acid on the C-3 position with hydroxydodecanoic acid or dodecanoic acid and the presence of variable amts. of hexadecanoic acid. The dodecanoic acid is the 1st nonhydroxylated fatty acid to be found directly linked to a lipid A

glucosamine. The lipids A were heterogeneous and composed of 1-3 major and several minor mol. species. The fatty acids in ester linkage were localized by PDMS of chemical modified lipids A. B. pertussis lipids A are usually hypoacylated with respect to those of enterobacterial lipids A. However, 1 of the 3 B. bronchiseptica strains had a major hexaacylated mol. species. C-4 and C-6' hydroxyl groups of the backbone disaccharide were unsubstituted, the latter being the proposed attachment site of the polysaccharide. The structural variability seen in these 3 lipids A was unusual for a single species and may have consequences for the pathogenicity of this Bordetella sp.

IT 191987-45-8 191987-47-0
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(variability of fatty acid substitution in lipids A of 3 Bordetella bronchiseptica strains)

RN 191987-45-8 CAPLUS
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]amino]-4-O-phosphono-β-D-glucopyranosyl]-2-[[(3R)-3-hydroxy-1-oxotetradecyl]amino]-, 1-(dihydrogen phosphate) 3-dodecanoate (9CI) (CA INDEX NAME)

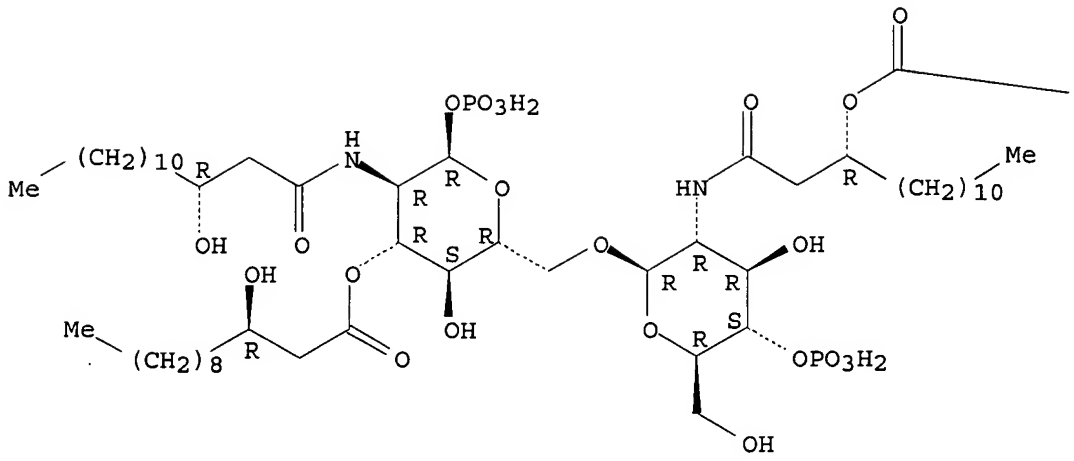
Absolute stereochemistry.



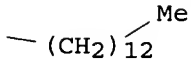
RN 191987-47-0 CAPLUS
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-2-[[(3R)-1-oxo-3-[(1-oxotetradecyl)oxy]tetradecyl]amino]-4-O-phosphono-β-D-glucopyranosyl]-2-[[(3R)-3-hydroxy-1-oxotetradecyl]amino]-, 1-(dihydrogen phosphate) 3-[(3R)-3-hydroxydodecanoate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:568538 CAPLUS
DOCUMENT NUMBER: 105:168538
TITLE: Characterization of a structural series of lipid A obtained from the lipopolysaccharides of Neisseria gonorrhoeae. Combined laser desorption and fast atom bombardment mass spectral analysis of high performance liquid chromatography-purified dimethyl derivatives
AUTHOR(S): Takayama, Kuni; Qureshi, Nilofer; Hyver, Karen; Honovich, Jeff; Cotter, Robert J.; Mascagni, Paolo; Schneider, Herman
CORPORATE SOURCE: Mycobacteriol. Res. Lab., William S. Middleton Mem. Veterans Hosp., Madison, WI, 53705, USA
SOURCE: Journal of Biological Chemistry (1986), 261(23), 10624-31
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Monophosphoryl lipid A (MLA) obtained from the lipopolysaccharides of serum-sensitive strains of N. gonorrhoeae was fractionated on a silicic acid column to yield the hexaacyl and pentaacyl MLAs. The di-Me derivative of the hexaacyl MLA was analyzed by proton NMR spectroscopy. The di-Me esters of hexaacyl and pentaacyl MLAs were further purified by reverse-phase HPLC, and all of the peaks were analyzed by laser desorption mass spectrometry. Considerable structural information was obtained by laser desorption mass spectrometry due to 3 kinds of specific fragmentations of the sugar at the reducing end. Two major fractions were also analyzed by pos. ion fast atom bombardment mass spectrometry. HPLC separated the di-Me MLA according to number, nature, and position of the fatty acyl groups. Since almost no structural information is available, the mass spectra of the samples were interpreted on the basis of the established structure of a model lipid A (hexaacyl MLA derived from

Salmonella minnesota). Thirteen different structures of di-Me MLA were identified. The 4 prominent di-Me MLAs found in the fractionated samples were M1 (mol. weight 1463), M2 (1479), M3 (1661), and M4 (1677). These MLAs appear to have a 1' → 6 linked glucosamine disaccharide backbone. The most prominent hexaacyl MLA was M3. Perhaps it contains hydroxylaurate at the 3- and 3'-positions in ester linkage and lauroxymyristate at the 2- and 2'-positions in amide linkage of the glucosamine disaccharide. The most abundant pentacyl MLA was M2. It probably contains hydroxylaurate at the 3- and 3'-positions in ester linkage, lauroxymyristate at the 2'-position in amide linkage, and hydroxymyristate at the 2-position in amide linkage of the disaccharide. The lipid A of N. gonorrhoeae appeared to differ from that of the Salmonella strains by the presence of shorter-chain fatty acids and by the normal fatty acid distribution in the reducing and distal subunits.

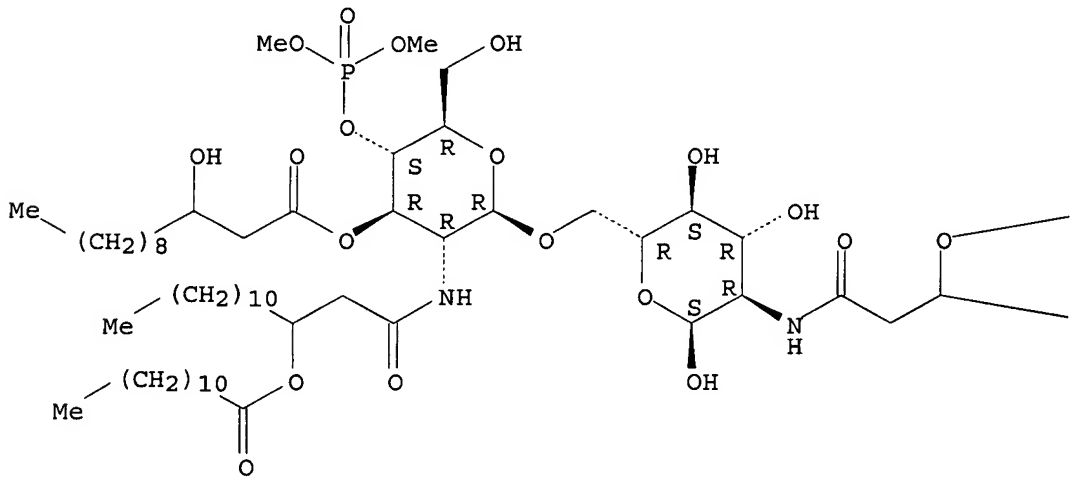
IT 104783-31-5
RL: BIOL (Biological study)
(of Neisseria gonorrhoeae, structure of)

RN 104783-31-5 CAPLUS

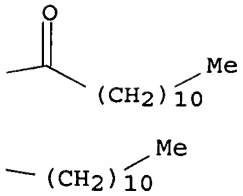
CN α-D-Glucopyranose, 2-deoxy-6-O-[2-deoxy-4-O-(dimethoxyphosphinyl)-3-O-(3-hydroxy-1-oxododecyl)-2-[[1-oxo-3-[(1-oxododecyl)oxy]tetradecyl]amino]-β-D-glucopyranosyl]-2-[[1-oxo-3-[(1-oxododecyl)oxy]tetradecyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:38171 CAPLUS
DOCUMENT NUMBER: 146:148986
TITLE: Wound healing polymeric networks based on DOPA
INVENTOR(S): Beckman, Eric J.
PATENT ASSIGNEE(S): University of Pittsburgh, USA
SOURCE: PCT Int. Appl., 70pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007005792	A2	20070111	WO 2006-US25915	20060701
WO 2007005792	A3	20070621		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

US 2007014755	A1	20070118	US 2006-479627	20060701

PRIORITY APPLN. INFO.:
US 2005-695912P P 20050701
US 2006-789372P P 20060405

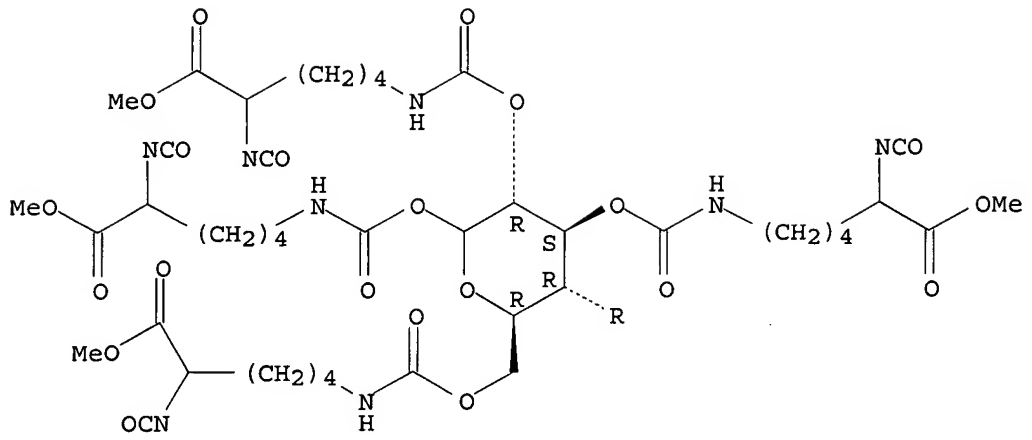
AB A composition includes at least one biol. active agent covalently attached to a first polymerizing mol. that is adapted to undergo a free radical polymerization The first polymerizing mol. retains the ability to undergo free radical polymerization after attachment of the bioactive agent thereto. The first polymerizing mol. is preferably biocompatible. The polymerizing mol. can, for example, be dihydroxyphenyl-L-alanine (DOPA) or tyrosine. The composition can also include a second component synthesized by reacting at least one core mol. having a plurality of reactive hydrogen groups with at least one multi-isocyanate functional mol. to create a conjugate including terminal isocyanate groups. The conjugate mol. is reacted with a second polymerizing mol. that is adapted to undergo a free radical polymerization The second polymerizing mol. includes a reactive hydrogen to react with the isocyanate groups of the conjugate. The second polymerizing mol. retains the ability to undergo the free radical polymerization after reaction with the conjugate. In several embodiments, the first polymerizing mol. and the second polymerizing mol. are the same and DOPA or tyrosine.

IT 918888-93-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(wound healing polymeric networks based on DOPA)

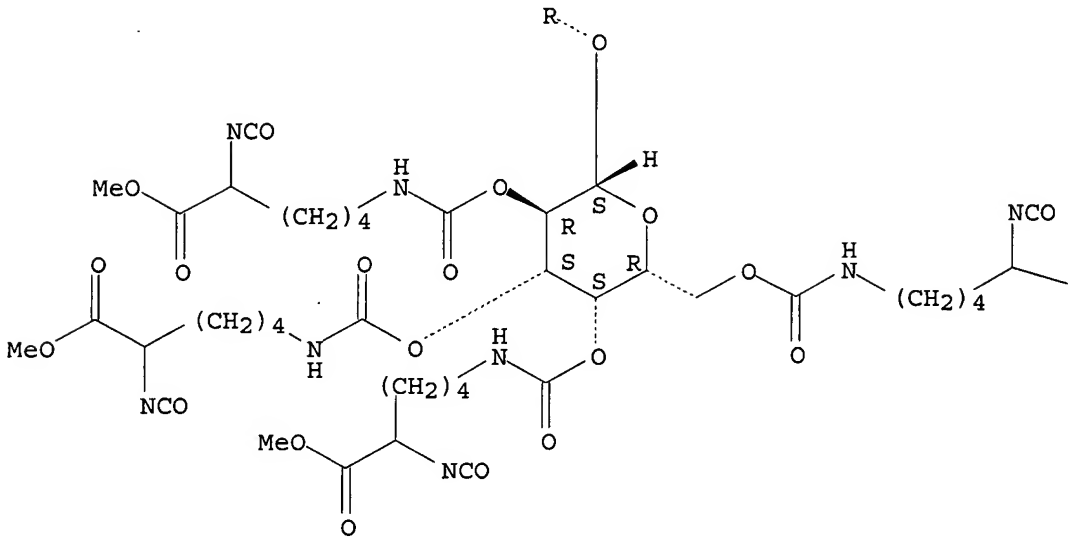
RN 918888-93-4 CAPLUS
CN D-Glucopyranose, 4-O-[2,3,4,6-tetrakis-O-[[(5-isocyanato-6-methoxy-6-oxohexyl)amino]carbonyl]-β-D-galactopyranosyl]-, 1,2,3,6-tetrakis[N-(5-isocyanato-6-methoxy-6-oxohexyl)carbamate] (CA INDEX NAME)

Absolute stereochemistry.

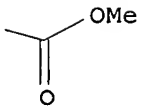
PAGE 1-A



PAGE 2-A



PAGE 2-B



L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:5795 CAPLUS
DOCUMENT NUMBER: 138:78455
TITLE: Ointments containing polyalkylene glycol derivative-modified biologically active polypeptides
INVENTOR(S): Yamasaki, Motoo; Suzawa, Toshiyuki; Murakami, Tatsuya; Sakurai, Noriko
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 165 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

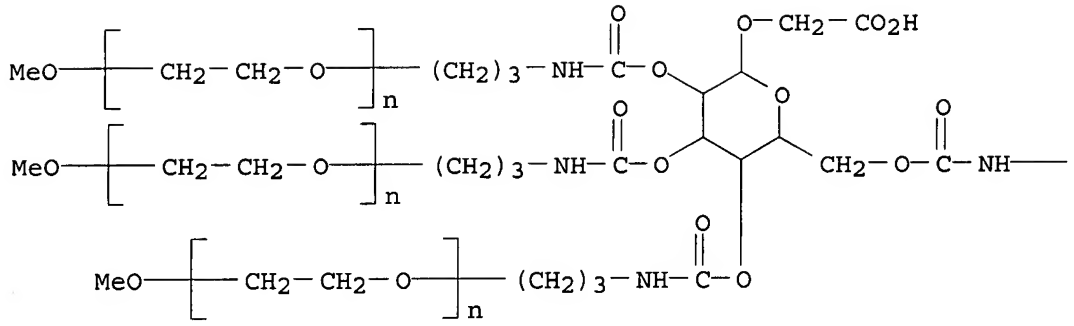
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003000278	A1	20030103	WO 2002-JP6227	20020621
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002346199	A1	20030108	AU 2002-346199	20020621
PRIORITY APPLN. INFO.:			JP 2001-190330 A	20010622
			WO 2002-JP6227 W	20020621

AB Disclosed are ointments containing a chemical modified physiol. active polypeptide, wherein the chemical modified physiol. active polypeptide is exemplified by a physiol. active polypeptide chemical modified with at least one polyalkylene glycol, and the physiol. active polypeptide to be chemical modified is exemplified by superoxide dismutase, interferon-α, interferon-β, interferon-γ and granulocyte colony-stimulating factor. A polyethylene glycol cyclohexane derivative was prepared, and its N-hydroxysucinimide ester was reacted with recombinant human interferon-β. The modified interferon-β showed excellent antivirus activity in FL cells. Also, an ointment containing modified interferon-β showed improved storage stability as compared with unmodified interferon-β-containing ointment.

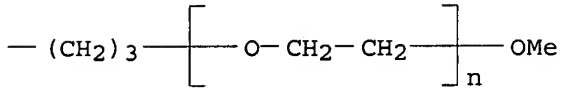
IT 479421-91-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of polyalkylene glycol derivative-modified biol. active polypeptides for ointments)

RN 479421-91-5 CAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-methoxy-, ether with [[2,3,4,6-tetrakis-O-[[(3-hydroxypropyl)amino]carbonyl]-α-D-glucopyranosyl]oxy]acetic acid (4:1) (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

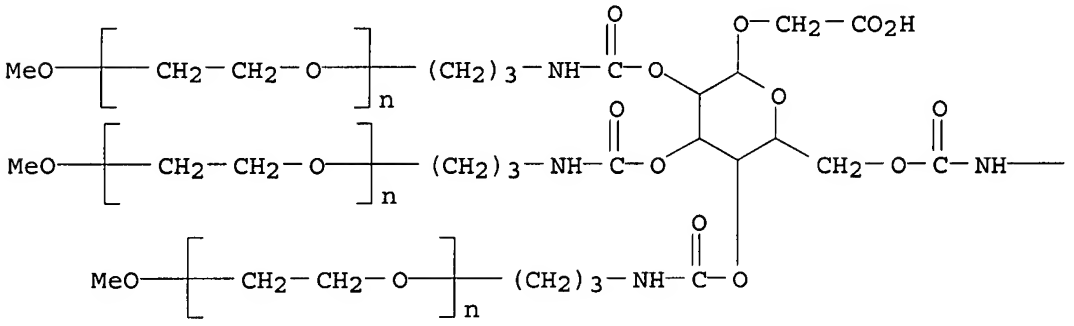


IT 479421-91-5DP, conjugates with polypeptides
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of polyalkylene glycol derivative-modified biol. active polypeptides for ointments)

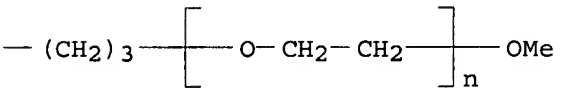
RN 479421-91-5 CAPLUS

CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-methoxy-, ether with [[2,3,4,6-tetrakis-O-[[(3-hydroxypropyl)amino]carbonyl]-α-D-glucopyranosyl]oxy]acetic acid (4:1) (9CI) (CA INDEX NAME)

PAGE 1-A



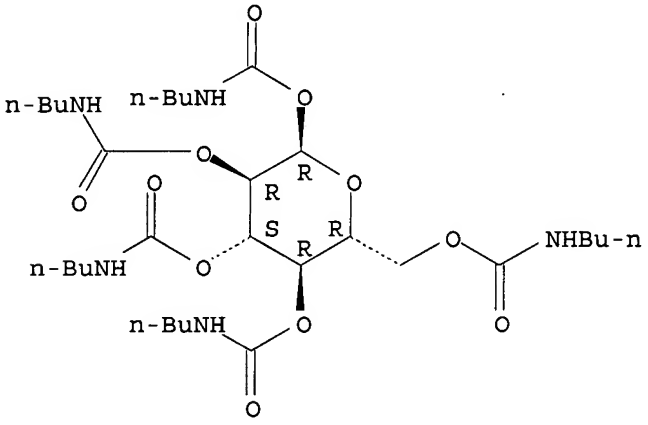
PAGE 1-B



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

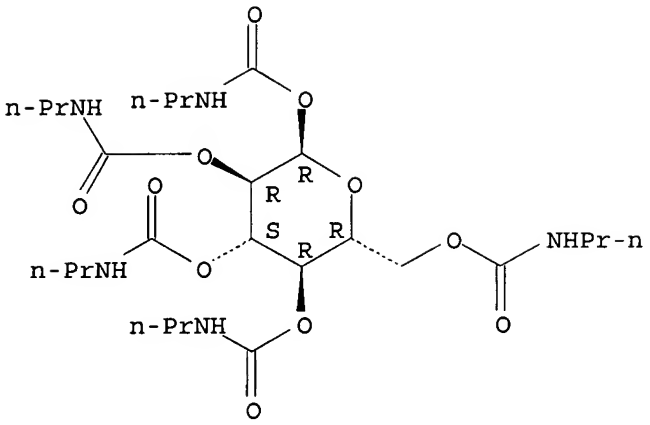
L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:164753 CAPLUS
DOCUMENT NUMBER: 120:164753
TITLE: The effectiveness of high pressure in the syntheses of pure hexose pentacarbamates and -carboxylates
AUTHOR(S): Eagle, Andrew J.; Herrington, Thelma M.; Isaacs, Neil S.
CORPORATE SOURCE: Dep. Chem., Univ. Reading, Reading, RG6 2AD, UK
SOURCE: Journal of Chemical Research, Synopses (1993), (10), 390
CODEN: JRPSDC; ISSN: 0308-2342
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The synthesis of 15 pentacarbamates and 26 pentacarboxylate esters of α-D- and β-D-glucose and, in particular, the effective use of high pressure condition in the reactions of th sugars with isocyanates and with acyl chlorides in order to force complete esterification to all hydroxy functions, is reported. The phase properties of the products in relation to liquid crystal behavior are discussed.
IT 153214-88-1P 153214-89-2P 153214-90-5P
153214-91-6P 153214-92-7P 153214-93-8P
153214-94-9P 153214-95-0P 153214-98-3P
153214-99-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and liquid crystals of)
RN 153214-88-1 CAPLUS
CN α-D-Glucopyranose, pentakis(butylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



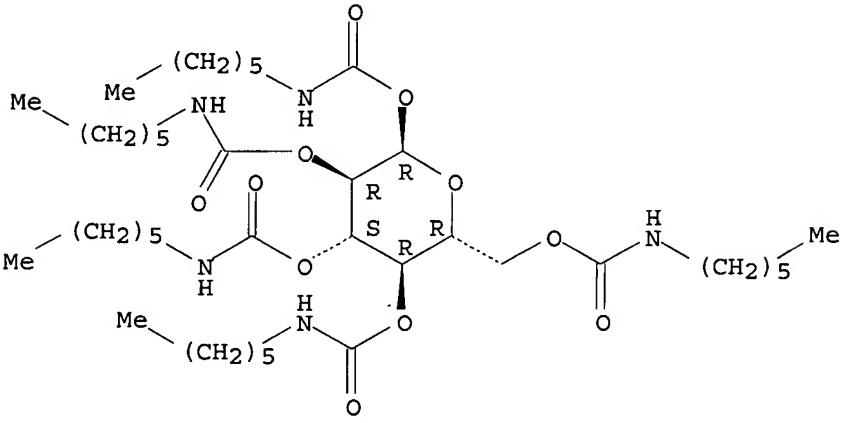
RN 153214-89-2 CAPLUS
CN α-D-Glucopyranose, pentakis(propylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



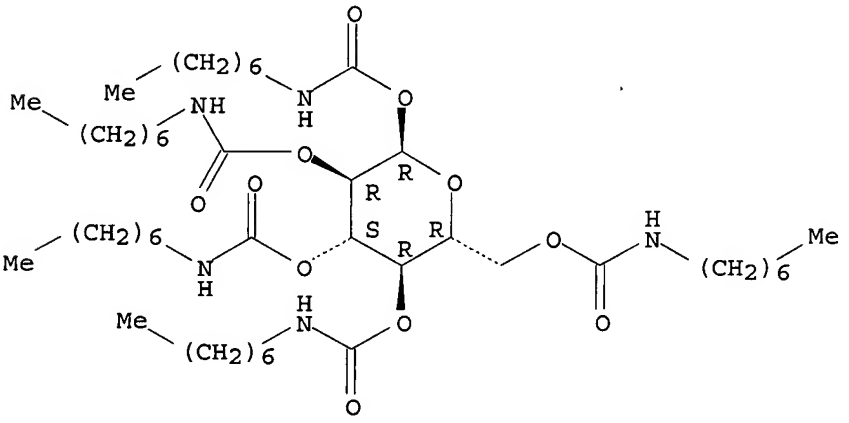
RN 153214-90-5 CAPLUS
CN α-D-Glucopyranose, pentakis(hexylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



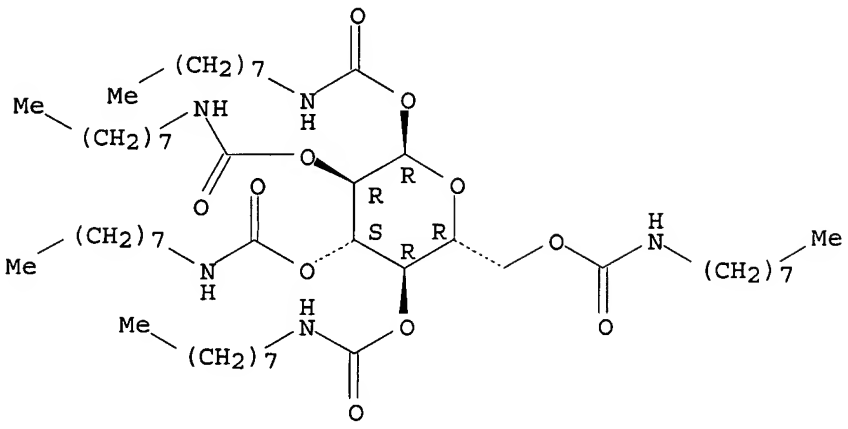
RN 153214-91-6 CAPLUS
CN α-D-Glucopyranose, pentakis(heptylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



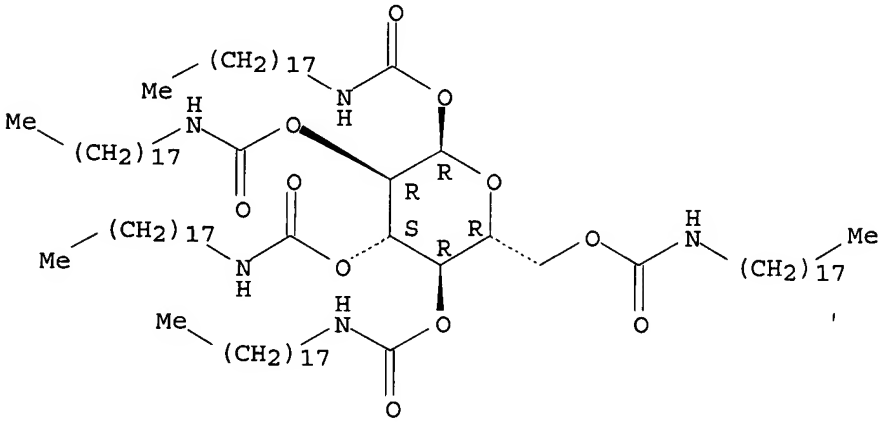
RN 153214-92-7 CAPLUS
CN α-D-Glucopyranose, pentakis(octylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153214-93-8 CAPLUS
CN α-D-Glucopyranose, pentakis(octadecylcarbamate) (9CI) (CA INDEX NAME)

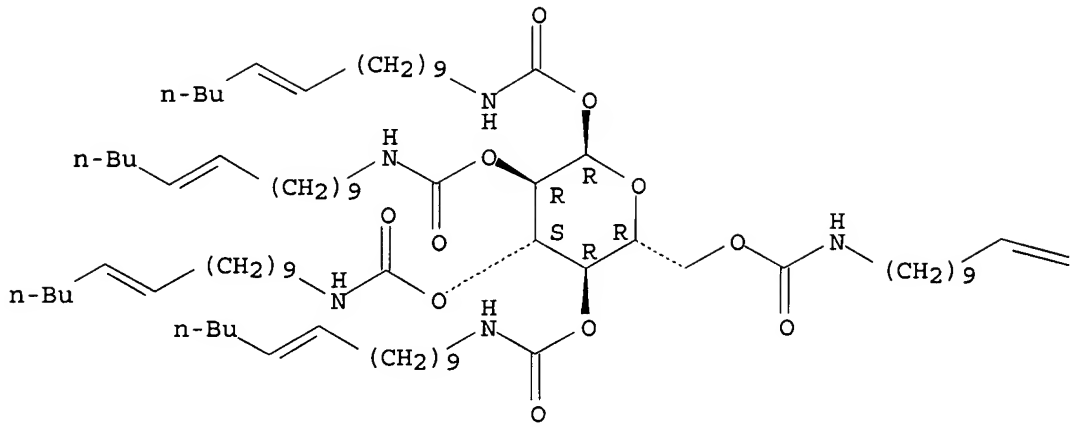
Absolute stereochemistry.



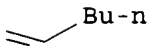
RN 153214-94-9 CAPLUS
CN α-D-Glucopyranose, pentakis(10-pentadecenylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A

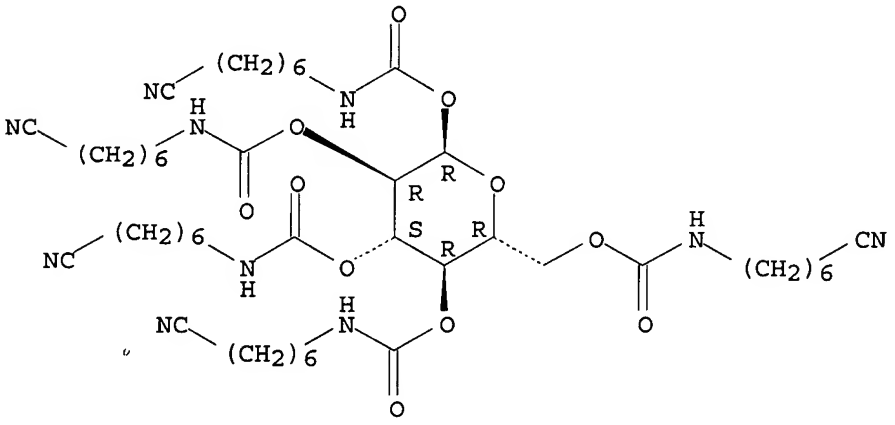


PAGE 1-B



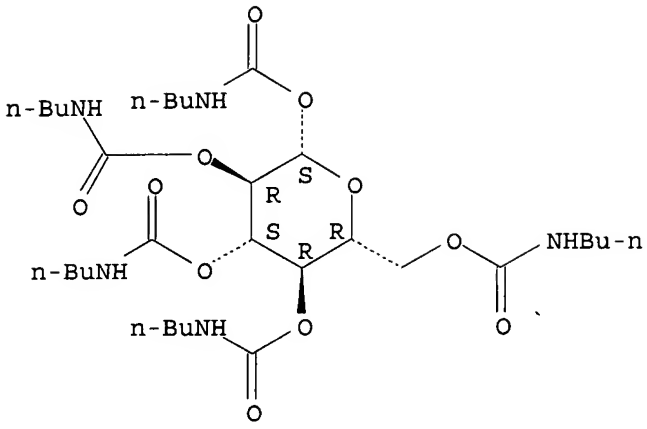
RN 153214-95-0 CAPLUS
CN α-D-Glucopyranose, pentakis[(6-cyanohexyl)carbamate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



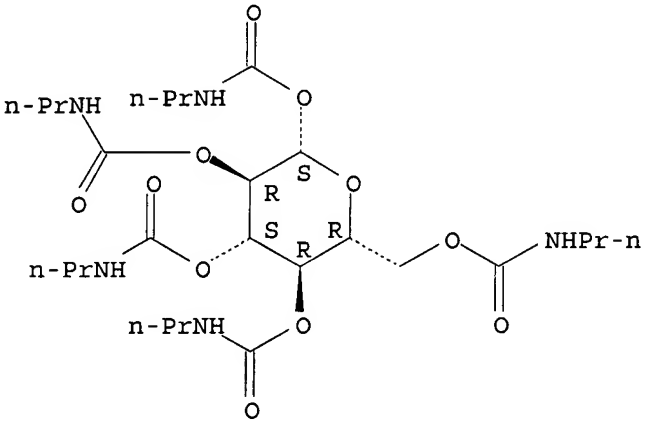
RN 153214-98-3 CAPLUS
CN β-D-Glucopyranose, pentakis(butylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153214-99-4 CAPLUS
CN β-D-Glucopyranose, pentakis(propylcarbamate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L5 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:400974 CAPLUS
TITLE: Structure design of multifunctional furoate and pyroglutamate esters of dextran by polymer-analogous reactions
AUTHOR(S): Hornig, Stephanie; Liebert, Tim; Heinze, Thomas
CORPORATE SOURCE: Center of Excellence for Polysaccharide Research, Friedrich Schiller University of Jena, Jena, D-07743, Germany
SOURCE: Macromolecular Bioscience (2007), 7(3), 297-306
CODEN: MBAIBU; ISSN: 1616-5187
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Well-defined multifunctionalized dextran esters bearing photo-crosslinkable and chiral groups as well as small alkyl moieties for the adjustment of the solubility were prepared from two dextran samples with different origin and mol. weight The examination of side structures of the starting dextran was carried out by different one- and two-dimensional NMR techniques. The main synthesis path via in situ activation of 2-furancarboxylic acid and pyroglutamic acid with CDI under mild conditions gives highly functionalized dextran derivs. possessing a d.p. in the range of the starting polysaccharide. The subsequent reaction with propionic anhydride leads to completely substituted, CHCl3 soluble derivs. useful for the determination of the particular degree of substitution. By variation of the molar ratios of polymer to reagent with photo-crosslinkable and chiral moieties during the reaction and even by subsequent peracylation, multifunctional dextran derivs. with adjustable properties like the hydrophilic/hydrophobic balance were obtained that may form biocompatible spherical nanoparticles.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:250936 CAPLUS
TITLE: Poly(vinyl alcohol) hydrogels by click chemistry
AUTHOR(S): Ossipov, Dmitri A.; Hilborn, Jons
CORPORATE SOURCE: Material Chemistry Department, Division of Polymer Chemistry, Uppsala University, 75121 Uppsala, Swed.
SOURCE: Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006), POLY-351. American Chemical Society: Washington, D. C.
CODEN: 69HYEC
DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)
LANGUAGE: English
AB Huisgen's 1,3-dipolar azide-alkyne cycloaddn. was recently defined as a powerful "click chemical" reaction. The particular narrow distributions of azides and alkynes reactivities and their weak acid-base properties provides bio-orthogonality and ability to use this reaction in the biol. systems. That is why we envisioned the incorporation of azido and alkyne functional groups into synthetic biodegradable polymer for the purpose of in-situ hydrogel formation. Thus, poly(vinyl alc.) (PVA) hydrogel was prepared by means of intermol. reaction between azide-modified PVA and alkyne-modified PVA. The polymers were synthesized by carbonyldiimidazole (CDI)-mediated couplings of the functional groups terminated amines, 1-azido-2-aminoethane, propargylamine, or N-methylpropargylamine, to PVA. Low degrees (1-5%) of PVA modification were required in order to keep PVA soluble in water, but still to give gel formation. Mixing of the two different polymer components results in a chemoselective coupling between alkynyl and azido functional groups with the multiple formation of triazole cross-links and subsequent hydrogel formation. The approach we describe here presents a promising alternative to a common chemical hydrogel

preparation technique which utilize bifunctional low-mol. weight cross-linkers. At the same time, azide and alkyne groups are easy to introduce into organic compds. which prompt us, as a next step, the introduction of the alkynyl and azido functionalities to the naturally occurring polysaccharides, such as hyaluronic acid, chitosan, or alginate. This may open the way for their efficient crosslinking through "click chemical" ligation.

L5 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:777856 CAPLUS
DOCUMENT NUMBER: 139:275732
TITLE: Modified polysaccharide-protein conjugates having improved stability in water for use as vaccines
INVENTOR(S): Costantino, Paolo; Berti, Francesco; Norelli, Francesco; Bartoloni, Antonella
PATENT ASSIGNEE(S): Chiron S.r.l., Italy
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003080678	A1	20031002	WO 2003-IB1436	20030326
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2480389	A1	20031002	CA 2003-2480389	20030326
AU 2003216633	A1	20031008	AU 2003-216633	20030326
EP 1490409	A1	20041229	EP 2003-712543	20030326
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003008768	A	20050215	BR 2003-8768	20030326
JP 2005526153	T	20050902	JP 2003-578430	20030326
CN 1697841	A	20051116	CN 2003-812001	20030326
NZ 535968	A	20060831	NZ 2003-535968	20030326
EP 1777236	A1	20070425	EP 2006-76853	20030326
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR				
MX 2004PA09339	A	20050125	MX 2004-PA9339	20040924

PRIORITY APPLN. INFO.:		
GB 2002-7117	A	20020326
GB 2002-20195	A	20020830
GB 2002-29494	A	20021218
GB 2002-30163	A	20021224
EP 2003-712543	A3	20030326
WO 2003-IB1436	W	20030326

AB A modified polysaccharide, in particular a modified Neisseria meningitidis serogroup A polysaccharide, which retains immunogenicity but has improved stability. Typically, the modified polysaccharide is prepared by reacting a capsular polysaccharide, or oligosaccharide fragment thereof, with a bifunctional reagent such as CDI, followed by reaction with an amino compound, such dimethylamine. Modified polysaccharide -protein conjugates and vaccines prepared from such conjugates are also described.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:488257 CAPLUS
DOCUMENT NUMBER: 97:88257
TITLE: Activated matrix and method of activation
INVENTOR(S): Ayers, John S.; Bethell, Geoffrey S.; Hancock, William S.; Hearn, Milton T. W.
PATENT ASSIGNEE(S): Development Finance Corp. of New Zealand, N. Z.
SOURCE: U.S., 12 pp. Cont.-in-part of U.S. 4,224,439.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4330440	A	19820518	US 1980-128847	19800310
US 4224439	A	19800923	US 1978-874628	19780202
PRIORITY APPLN. INFO.:			US 1978-874628 A2	19780202
			NZ 1977-183283 A	19770208

AB Crosslinked polysaccharides (e.g. agarose, dextran, cellulose), their copolymers with synthetic polymers (e.g. acrylamides), acrylates, and methacrylates), or rigid supports (e.g. silica beads, coated with hydroxyalkyl groups) are activated by carbonylation with N,N'-carbonyldiimidazole(CDI), N,N'-carbonyldi-1,2,4-triazole, and N,N'-carbonyldi-1,2,3-benzotriazole and then coupled to various ligands for use as stationary phases for chromatog. or immobilization of biol. compds. The greatest advantage of using the carbonylating agents instead of CNBr for activation is that no charged groups are introduced into the matrix during the coupling steps. In 1 example, Sepharose CL 6B was activated with CDI, coupled to soybean trypsin inhibitor (with or without the spacer compound 6-aminohexanoic acid), and used for the affinity chromatog. of trypsin. Results of the activation of other common matrixes by carbonylation are described.

L5 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:79146 CAPLUS
DOCUMENT NUMBER: 96:79146
TITLE: Investigation of the activation of various insoluble polysaccharides with 1,1'-carbonyldiimidazole and of the properties of the activated matrixes
AUTHOR(S): Bethell, G. S.; Ayers, J. S.; Hearn, M. T. W.; Hancock, W. S.
CORPORATE SOURCE: Dep. Chem. Biochem. Biophys., Massey Univ., Palmerston North, N. Z.
SOURCE: Journal of Chromatography (1981), 219(3), 361-71
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A recently-described procedure (B. et al., 1979) is further characterized for preparing affinity chromatog. supports by activating hydroxylic solid-phase supports with 1,1'-carbonyldiimidazole (CDI). Matrixes with a controlled degree of substitution can be synthesized by use of CDI, and a high level of activation can readily be achieved: up to 5 mmol/g (dry) with cross-linked agarose. The CDI -activated agarose has a half-life >14 wks when stored in dioxane. Conditions for coupling simple amines of differing pKa values to these active matrixes were evaluated and the coupling yields were analyzed; conditions suitable for coupling proteins were thereby established. The linkage of the ligand amino group to the support (an N-alkylcarbamate showed good stability over a wide pH range, and a greater stability than

that of the isourea linkage obtained by CNBr activation. This new activation procedure should be particularly useful for a variety of affinity chromatog. expts., including those which cannot tolerate hydrolytic release of small amts. of the insolubilized ligand. The CDI method was extended to other polysaccharide matrixes, e.g. cellulose and dextran derivs., and to glycophase-coated glass beads. The activated glass bead derivative provides a suitable support for attachment of ligands for high-performance affinity chromatog.

L5 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2007349866 MEDLINE
DOCUMENT NUMBER: PubMed ID: 17366516
TITLE: Structure design of multifunctional furoate and pyroglutamate esters of dextran by polymer-analogous reactions.
AUTHOR: Hornig Stephanie; Liebert Tim; Heinze Thomas
CORPORATE SOURCE: Center of Excellence for Polysaccharide Research, Friedrich Schiller University of Jena, Humboldtstrasse 10, Jena, Germany.
SOURCE: Macromolecular bioscience, (2007 Mar 8) Vol. 7, No. 3, pp. 297-306.
Journal code: 101135941. ISSN: 1616-5187.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200707
ENTRY DATE: Entered STN: 14 Jun 2007
Last Updated on STN: 17 Jul 2007
Entered Medline: 16 Jul 2007

AB Well-defined multifunctionalized dextran esters bearing photo-crosslinkable and chiral groups as well as small alkyl moieties for the adjustment of the solubility were prepared from two dextran samples with different origin and molecular weight. The examination of side structures of the starting dextran was carried out by different one- and two-dimensional NMR techniques. The main synthesis path via in situ activation of furan-2-carboxylic- and pyroglutamic acid with CDI under mild conditions gives highly functionalized dextran derivatives possessing a degree of polymerization in the range of the starting polysaccharide. The subsequent reaction with propionic anhydride leads to completely substituted, CHCl(3) soluble derivatives useful for the determination of the particular degree of substitution. By variation of the molar ratios of polymer to reagent with photo-crosslinkable- and chiral moieties during the reaction and even by subsequent peracylation, multifunctional dextran derivatives with adjustable properties like the hydrophilic/hydrophobic balance were obtained that may form biocompatible spherical nanoparticles.

L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:203711 CAPLUS
DOCUMENT NUMBER: 140:240996
TITLE: Modified saccharides and their protein conjugates
INVENTOR(S): Giannozzi, Aldo; Averani, Giovanni; Norelli, Francesco; Costantino, Paolo
PATENT ASSIGNEE(S): Chiron S.r.l., Italy
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004019992	A1	20040311	WO 2003-IB4194	20030901
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2497167	A1	20040311	CA 2003-2497167	20030901
AU 2003260921	A1	20040319	AU 2003-260921	20030901
EP 1534342	A1	20050601	EP 2003-791149	20030901
EP 1534342	B1	20060308		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1688343	A	20051026	CN 2003-823724	20030901
BR 2003014089	A	20051116	BR 2003-14089	20030901
AT 319481	T	20060315	AT 2003-791149	20030901
JP 2006511465	T	20060406	JP 2004-532625	20030901
NZ 538703	A	20060929	NZ 2003-538703	20030901
ES 2260682	T3	20061101	ES 2003-3791149	20030901
MX 2005PA02315	A	20050608	MX 2005-PA2315	20050228
US 2006263390	A1	20061123	US 2006-526124	20060616

PRIORITY APPLN. INFO.: GB 2002-20198 A 20020830
WO 2003-IB4194 W 20030901

AB Saccharide-protein conjugates having a new type of linker are described. The conjugates comprising the new linker are prepared from modified capsular saccharides. The linker is especially useful for preparing conjugates of Neisseria meningitidis serogroup A saccharide. Conjugates having this new linker have improved immunogenicity compared to other types of conjugates. A process for modifying a capsular saccharide comprises the steps of: (a) providing a capsular saccharide having a hydroxy group; (b) reacting the hydroxy group with a bifunctional reagent, e.g., 1,1'-carbonyldiimidazole or carbonyldi-1,2,4-triazole in an organic solvent; and (c) reacting the product of step (b) with an amino compound, such as 1-amino-4,5-pentanediol. The product of step (c) is cleaved with periodate, thereby providing an aldehyde compound suitable for linking to a protein by a reductive amination reaction using NaBH3CN. A pharmaceutical composition comprising a saccharide-protein conjugate, an adjuvant, and a carrier for preventing or treating diseases, such as bacterial meningitis, is also described.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:203711 CAPLUS
DOCUMENT NUMBER: 140:240996
TITLE: Modified saccharides and their protein conjugates
INVENTOR(S): Giannozzi, Aldo; Averani, Giovanni; Norelli, Francesco; Costantino, Paolo
PATENT ASSIGNEE(S): Chiron S.r.l., Italy
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004019992	A1	20040311	WO 2003-IB4194	20030901
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2497167	A1	20040311	CA 2003-2497167	20030901
AU 2003260921	A1	20040319	AU 2003-260921	20030901
EP 1534342	A1	20050601	EP 2003-791149	20030901
EP 1534342	B1	20060308		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1688343	A	20051026	CN 2003-823724	20030901
BR 2003014089	A	20051116	BR 2003-14089	20030901
AT 319481	T	20060315	AT 2003-791149	20030901
JP 2006511465	T	20060406	JP 2004-532625	20030901
NZ 538703	A	20060929	NZ 2003-538703	20030901
ES 2260682	T3	20061101	ES 2003-3791149	20030901
MX 2005PA02315	A	20050608	MX 2005-PA2315	20050228
US 2006263390	A1	20061123	US 2006-526124	20060616
PRIORITY APPLN. INFO.:			GB 2002-20198 A	20020830
			WO 2003-IB4194 W	20030901

AB Saccharide-protein conjugates having a new type of linker are described. The conjugates comprising the new linker are prepared from modified capsular saccharides. The linker is especially useful for preparing conjugates of Neisseria meningitidis serogroup A saccharide . Conjugates having this new linker have improved immunogenicity compared to other types of conjugates. A process for modifying a capsular saccharide comprises the steps of: (a) providing a capsular saccharide having a hydroxy group; (b) reacting the hydroxy group with a bifunctional reagent, e.g., 1,1'-carbonyldiimidazole or carbonyldi-1,2,4-triazole in an organic solvent; and (c) reacting the product of step (b) with an amino compound, such as 1-amino-4,5-pentanediol. The product of step (c) is cleaved with periodate, thereby providing an aldehyde compound suitable for linking to a protein by a reductive amination reaction using NaBH3CN. A pharmaceutical composition comprising a saccharide-protein conjugate, an adjuvant, and a carrier for preventing or treating diseases, such as bacterial meningitis, is also described.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

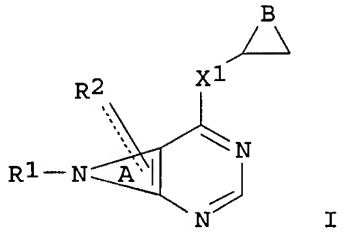
L10 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:963972 CAPLUS
TITLE: Preparation of fused pyrimidines as growth factor receptor tyrosine kinase inhibitors
INVENTOR(S): Seto, Masaki; Ohashi, Tomohiro
PATENT ASSIGNEE(S): Takeda Pharmaceutical Company Limited, Japan
SOURCE: PCT Int. Appl., 444pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007097470	A2	20070830	WO 2007-JP53859	20070222

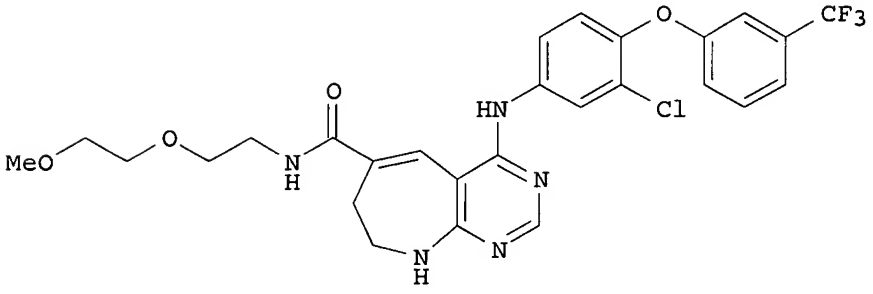
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2006-775777P P 20060223
GI



I



II

AB Title compds. I [A = (un)substituted N-containing 7-8 membered ring; B = (un)substituted (hetero)aryl; X1 = NR3Y, O, S, SO, SO2, CHR3; R3 = H, (un)substituted aliphatic hydrocarbyl; or R3 is optionally bonded to the C atom on ring B to form an (un)substituted ring; Y1 = a bond, (un)substituted alkylene; R2 = H, (un)substituted group bonded via a C, N, O, or S atom when R2 is connected to a single bond; R2 = oxo, (un)substituted alkylidene, imino when R2 is connected to a double bond; and their salts, and prodrugs] were prepared as growth factor receptor

tyrosine kinase inhibitors. Thus, pyrimidoazepine II was prepared via cyclization of Me 4-[(6-chloro-5-formylpyrimidin-4-yl)(4-methoxybenzyl)amino]butanoate (preparation given) with 3-chloro-4-[3-(trifluoromethyl)phenoxy]aniline/dehydration (no data for the alc. intermediate). The compds. of the invention are inhibitors of growth factor receptor tyrosine kinases, e.g., pyrimidoazepine II expressed 96% inhibition of HER2 kinase at 1 μM and IC50 value below 100 nM in an assay for inhibition of breast cancer cell proliferation. I are useful for the prophylaxis or treatment of cancer.

L10 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:44970 CAPLUS
DOCUMENT NUMBER: 144:292649
TITLE: Synthesis and Biological Evaluation of Novel, Peripherally Selective Chromanyl Imidazolethione-Based Inhibitors of Dopamine β-Hydroxylase
AUTHOR(S): Beliaev, Alexandre; Learmonth, David A.; Soares-da-Silva, Patricio
CORPORATE SOURCE: Laboratories of Chemistry and Pharmacology, Department of Research Development, BIAL, S. Mamede do Coronado, 4745-457, Port.
SOURCE: Journal of Medicinal Chemistry (2006), 49(3), 1191-1197
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 144:292649
AB A novel series of dopamine β-hydroxylase (DBH) inhibitors was designed and synthesized incorporating modifications to the core structure of nepicastat, with the principal aim of discovering potent DBH inhibitors exerting minimal effects on dopamine (DA) and noradrenaline (NA) levels in the central nervous system. This study resulted in the identification of a potent, peripherally selective DBH inhibitor, (R)-5-(2-aminoethyl)-1-(6,8-difluorochroman-3-yl)-1,3-dihydroimidazole-2-thione hydrochloride (I, BIA 5-453). In expts. in mice and rats at Tmax (9 h after administration), I reduced NA levels in a dose-dependent manner in both the left atrium and the left ventricle, with the maximal inhibitory effect attained at a dose of 100 mg/kg. In contrast to that found in the heart, I failed to affect NA tissue levels in the brain. Compound I is thus presented as a candidate for clin. evaluation for the treatment of chronic heart failure and hypertension.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:680383 CAPLUS
DOCUMENT NUMBER: 136:1811
TITLE: Reactions of α-Acetoxy-N-nitrosopyrrolidine with Deoxyguanosine and DNA
AUTHOR(S): Wang, Mingyao; McIntee, Edward J.; Shi, Yongli; Cheng, Guang; Upadhyaya, Pramod; Villalta, Peter W.; Hecht, Stephen S.
CORPORATE SOURCE: University of Minnesota Cancer Center, Minneapolis, MN, 55455, USA
SOURCE: Chemical Research in Toxicology (2001), 14(10), 1435-1445
CODEN: CRTOEC; ISSN: 0893-228X
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors investigated the reactions of α-acetoxy-N-nitrosopyrrolidine (α-acetoxyNPYR) with dGuo and DNA. α-AcetoxyNPYR is a stable precursor to the major proximate

carcinogen of NPYR, α-hydroxyNPYR. The authors' goal was to develop appropriate conditions for the anal. of DNA adducts of NPYR formed in vivo. Products of the α-acetoxyNPYR-dGuo reactions were analyzed directly by HPLC or after treatment of the reaction mixts. with NaBH3CN. Products of the α-acetoxyNPYR-DNA reactions were released by enzymic or neutral thermal hydrolysis of the DNA, then analyzed by HPLC. Alternatively, the DNA was treated with NaBH3CN prior to hydrolysis and HPLC anal. The reactions of α-acetoxyNPYR with dGuo and DNA were complex. The authors have identified 13 products of the dGuo reaction-6 of these were characterized in this reaction for the first time. They were four diastereomers of N2-(3-hydroxybutylidene)dGuo (20, 21), 7-(N-nitrosopyrrolidin-2-yl)Gua (2), and 2-(2-hydroxypyrrolidin-1-yl)deoxyinosine (12). Adducts 20 and 21 were identified by comparison to stds. produced in the reaction of 3-hydroxybutanal with dGuo. Adduct 2 was identified by its spectral properties while adduct 12 was characterized by comparison to an independently synthesized standard With the exception of adduct 2, all products of the dGuo reactions were also observed in the DNA reactions. The major product in both the dGuo and DNA reactions was N2-(tetrahydrofuran-2-yl)dGuo (10), consistent with previous studies. Several other previously identified adducts were also observed in this study. HPLC anal. of reaction mixts. treated with NaBH3CN provided improved conditions for adduct identification, which should be useful for in vivo studies of DNA adduct formation by NPYR.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1946:15513 CAPLUS
DOCUMENT NUMBER: 40:15513
ORIGINAL REFERENCE NO.: 40:2991c-i,2992a-d
TITLE: Azo dyes for cellulose acetate, etc.
INVENTOR(S): Dickey, Joseph B.; McNally, James G.
PATENT ASSIGNEE(S): Eastman Kodak Co.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2386599		19451009	US 1943-484079	19430422

GI For diagram(s), see printed CA Issue.

AB Azo dyes (I) suitable for dyeing wool, silk, nylon, and organic derivs. of cellulose, especially cellulose acetate, and which have the general formula in which X and Y are H, OH, alkoxy, alkyl, CN, halogen, NO2, alkylsulfonamide, alkoxyalkylsulfonamide, hydroxyalkylsulfonamide, or alkylsulfone, R1 is the residue of a benzene nucleus and R2 is H, alkyl, alkoxyalkyl, hydroxyalkyl, or an olefinic open-chain hydrocarbon group, are prepared by coupling a properly substituted diazotized amine (II) with a suitable coupling component (III) which contains the 4,5-dihydroxyamyl group. Examples of II are diazotized 1-amino-2-hydroxy-4-nitrobenzene, 1-amino-4-nitrobenzene-6-sulfon (2-methoxyethyl)amide, 1-amino-2,4-dinitrobenzene-6-sulfonethylamide, o- and p-nitroaniline, 4-aminoacetophenone, 1-amino-2-fluoro-4-nitrobenzene, 2,4-dinitroaniline, 1-amino-2,4-dinitro-6-chlorobenzene, p-aminoazobenzene, 1-aminonaphthalene, 2-amino-5-nitrobenzenesulfonic acid, 3-chloro-4-aminobenzenesulfonic acid, 1-naphthylamine-5-sulfonic acid, o-and p-aminophenyl methyl sulfone, 1-amino-2-chloro-4-nitrobenzene, 2-amino-3,5-dinitrobenzenesulfonethylamide, 1-amino-2,4-dinitro-6-hydroxybenzene, 3'- and 4'-nitrobenzeneazo-4-aminobenzene, 1-amino-2,4-dinitro-6-bromobenzene and -6-cyanobenzene, 1-amino-4-nitro-2,6-dichlorobenzene, 1-amino-2-methyl-4-nitrobenzene, 1-amino-2-ethoxy-4-nitrobenzene, 2-amino-5-nitrophenyl methyl sulfone, 2-amino-5-nitrophenyl methyl ketone, 1-amino-2-cyano-4-nitrobenzene,

2-amino-3,5-dinitrophenyl ethyl sulfone, 1-amino-2,4-dinitronaphthalene, 1-amino-2,4-dinitrobenzene-6-sulfon(2-methoxyethyl)amide, 1-amino-4-nitrobenzene-6-sulfon(2-hydroxyethyl)amide and 1-amino-2,4-dinitrobenzene-6-sulfon(2-hydroxyethyl) amide. Examples of III (A = 4,5-dihydroxyamyl) are (1-(2-hydroxyethyl-A-amino)-3-methylbenzene (IV), b4 245-50° (diacetate, b4 238-41°), 1-(A-amino)-5-hydroxynaphthalene, 1-A-2,7-dimethyl-1,2,3,4-tetrahydroquinoline, 1-(A-amino)-2-chlorobenzene, 1-(allyl-A-amino)-3-chlorobenzene, 1-bis-A-amino-3-methylbenzene (V), b2 196-202° (diacetate, b1.5 193-9°), 1-A-1,2,3,4-tetrahydroquinoline, 4-A-benzomorpholine, 1-(A-amino)-2-methoxy-5-methylbenzene, b3 194-8° (diacetate, b4 220-35°). 1-(A-amino)napththalene, b4 240-50° (diacetate, b4 252-70°), 1-A-7-methyltetrahydroquinoline, b4 221-3° (diacetate, b4 215-18°), 1-(2,3-dihydroxypropyl-A-amino)-3-methoxybenzene, 4-A-3-methylbenzothiamorpholine, A-aniline, ethyl-A-aniline, 1-A-dihydrobenzopyrazole, 1-A-6-methylindoline, (2-hydroxyethyl-A-amino) benzene, N-A-diphenylamine, (ethyl-A-amino)benzene, (2-hydroxypropyl-A-amino)-2-methoxybenzene, (allyl-A-amino)-2-methoxybenzene, (2-methoxyethyl-A-amino)-2,5-dimethoxybenzene, (2-sulfatoethyl-A-amino)-2-methoxy-5-methylbenzene, 1-(2-sulfoethyl-A-amino)naphthalene, 1-bis-A-amino-3-chlorobenzene, bis-A-aniline, 1-bis-A-amino-3-methoxybenzene, bis-A-amino-2-methoxy-5-chlorobenzene, 1-bis-A-amino-2-methoxy-5-methylbenzene, 1-bis-A-amino-2,5-dimethoxybenzene, 1-bis-A-aminonaphthalene, 1-bis-A-amino-5-hydroxynaphthalene, A-amino-2-fluorobenzene, A-amino-2-methylbenzene, A-amino-2-methoxybenzene, 1-A-amino-2-methoxy-5-acetylaminobenzene, 1-A-amino-5-acetylaminonaphthalene, 1-A-2-methyl-1,2,3,4-tetrahydroquinoline (VI) (diacetate, b9 215-25°), 4-A-3-methyl- and -6-methylbenzomorpholine, 4-A-6- and 8-acetylaminobenzomorpholine, and 1-A-5- and -7-acetylamino-1,2,3,4-tetrahydroquinoline. VI is prepared by heating 2-methyl-1,2,3,4-tetrahydroquinoline to 200° with 5-chloropentane-1,2-diol diacetate (VII), b20 157-8°, b12 141-8° (prepared by refluxing tetrahydrofurfuryl alc. (VIII) with AcCl and ZnCl2), in the presence of Na2CO3. Fractional distillation yields the diacetate of VI, which on acid hydrolysis gives VI. IV is prepared similarly by heating 1-(2-hydroxyethylamino)-3-methylbenzene, VII and Na2CO3 to yield the diacetate of IV, which on acid hydrolysis yields IV. V is prepared similarly by heating m-toluidine with 5-bromopentane-1,2-diol diacetate (prepared by refluxing VIII with AcBr) to yield the diacetate of V, which on acid hydrolysis yields V. The I are fast to light and washing and they discharge to a pure white.

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=> d his

     (FILE 'HOME' ENTERED AT 10:53:37 ON 27 SEP 2007)

     FILE 'REGISTRY' ENTERED AT 10:53:47 ON 27 SEP 2007
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L3           25043 S L1 SSS FULL

     FILE 'CAPLUS, MEDLINE' ENTERED AT 10:59:43 ON 27 SEP 2007
L4           17253 S L3
L5             211 S L4 AND CAPSULAR
L6             182 S L4 AND CAPSULAR ?SACCHARIDE?
L7               6 S L6 AND SEROGROUP?
L8             176 S L6 NOT L7
L9               7 S L8 AND NEISSERIA MENINGITIDIS
L10              0 S L9 NOT L8
L11            176 S L8 NOT L7
L12            169 S L8 NOT L9

     FILE 'REGISTRY' ENTERED AT 11:22:45 ON 27 SEP 2007
L13            STRUCTURE UPLOADED
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L17              3 S L16 AND CAPSULAR ?SACCHARIDE?
L18           1208 S L16 NOT L17
L19              4 S L18 AND ESTER LINKAGE?
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L3          12 S L1 SSS FULL

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L4           3 S L3
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     FILE 'REGISTRY' ENTERED AT 11:35:49 ON 27 SEP 2007
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L3          12 S L1 SSS FULL

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L7           0 S "5-AMINO1,2 DIHYDROXYPENTANE"
L8           0 S "5-AMINO-1,2 DIHYDROXYPENTANE"
L9           0 S "5-AMINO-1,2-DIHYDROXYPENTANE"
L10          0 S CDI (P) PERIODATE (P) ALDEHYDE (P) PROTEIN?
L11          0 S CDI (P) PERIODATE (P) ALDEHYDE
L12          0 S CDI (P) PERIODATE (P) PROTEIN?
L13          1 S ?CARBONYLDIIMIDAZOLE (P) PERIODATE (P) ALDEHYDE?

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L7            5 S L6
L8            1 S L7 AND ?SACCHARIDE?
L9            0 S L7 AND ?SUGAR?
L10           4 S L7 NOT L8
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